Pioneer Cottage Buderim

Conservation Management Plan

For BWMCA

June 2019

Appendices

Sunshine Coast COUNCIL

AUSTRALIAN HERITAGE SPECIALISTS

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02	20/08/2019	Updates from client comments	-	BG

Appendices

Appendix A – Best Practice Methodology – *The Australian ICOMOS Burra Charter 2013*

This CMP was prepared in accordance with the principles expressed in the *Australia ICOMOS Burra Charter, 2013* (*Burra Charter*). The *Burra Charter* underpins all cultural heritage management and statutory regulation in Australia. In particular, the charter "sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians" (*Burra Charter*: 1). It defines conservation as "the processes of looking after a place so as to retain its cultural significance" (*Burra Charter*: Article 1.4). Most importantly,

> The *Burra Charter* advocates a cautious approach to change: do as much as necessary to care for the place and to make it usable, but otherwise change it as little as possible so that its cultural significance is retained (*Burra Charter*: 1).

This approach represents the paramount philosophy guiding cultural heritage management and, along with the definition of conservation, provides the simplest explanation for managing a heritage place.

The *Burra Charter* also provides a clear and precise process that guides the conservation of a place, which is represented in the figure below. This CMP is the product of steps 1-5 and steps 6-7 are the responsibility of the manger(s) of the place, with the assistance of qualified heritage practitioners.

A full copy of *The Australian ICOMOS Burra Charter 2013* is attached.

Appendix B – QHR Boundary Map – Pioneer Cottage Buderim

Appendix C – QHR Heritage Citation – Pioneer Cottage Buderim

Queensland Government

Pioneer Cottage Buderim

- Place ID: 600688
- 5 Ballinger Crescent, Buderim

General

More images…

Also known as
JK Burnett (and family) residence
Classification
State Heritage
Register status
Entered
Date entered
21 October 1992
Type
Farming—agriculture/dairying/grazing/horticulture: Farm
Themes
2.4 Exploiting, utilising and transforming the land: Agricultural activities
6.4 Building settlements, towns, cities and dwellings: Dwellings
Construction period
1882, Pioneer Cottage Buderim (1882c - 1882c)
Historical period

1870s–1890s Late 19th century

Location

Address

5 Ballinger Crescent, Buderim

LGA

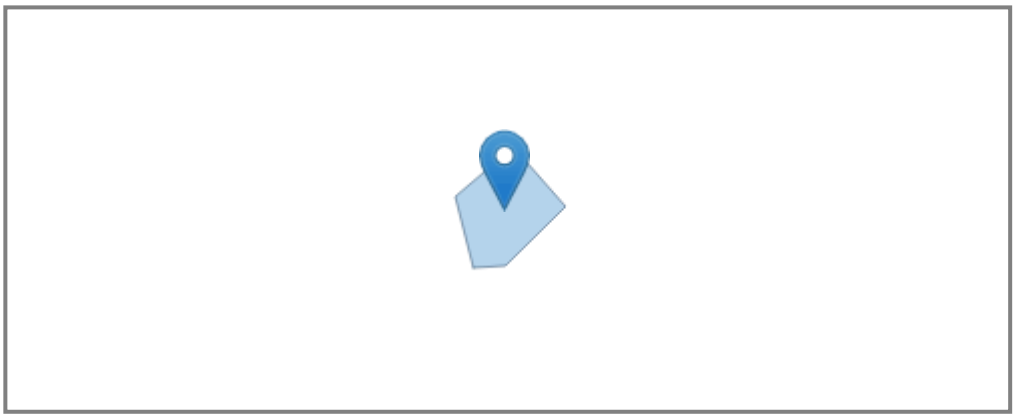
Sunshine Coast Regional Council

Coordinates

-26.68686033, 153.05111955

Map

- Enlarge map



Street view

Photography is provided by Google Street View and may include third-party images. Images show the vicinity of the heritage place which may not be visible.

Request a boundary map

A printable boundary map report can be emailed to you.

Email

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Significance

Criterion A

The place is important in demonstrating the evolution or pattern of Queensland's history.

Pioneer Cottage, the former JK Burnett home erected c1882-83, is important in demonstrating the early development of Buderim Mountain as an agricultural settlement, in particular the early success of sugar growing and sugar milling in the district.

Criterion B

The place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage.

It is one of the oldest surviving residences on the plateau, remains substantially intact, and demonstrates the principal characteristics of an early 1880s farmhouse built of local timbers no longer generally available.

Criterion D

The place is important in demonstrating the principal characteristics of a particular class of cultural places.

It is one of the oldest surviving residences on the plateau, remains substantially intact, and demonstrates the principal characteristics of an early 1880s farmhouse built of local timbers no longer generally available.

Criterion E

The place is important because of its aesthetic significance.

The rustic materials and simple form and plan have an aesthetic quality valued by the community.

Criterion G

The place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

The place has a special association for the Buderim community, as evidenced by their acquisition of the property for museum purposes in the mid-1960s.

Criterion H

The place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

Pioneer Cottage is significant for its close association with one of the early families of Buderim Mountain, the JK Burnetts, and for its close association with the work of the Buderim Historical

Society.

History

The residence now known as Pioneer Cottage Buderim was erected probably in the early 1880s for Buderim Mountain settlers John Kerle Burnett, his wife Ann North and family. It remains one of the oldest surviving sawn-timber houses on the plateau, and currently functions as a house museum and headquarters of the Buderim Historical Society.

JK Burnett was the eldest son of schoolteacher John Burnett and his wife Jane Kerle, who with their 9 children emigrated to Queensland from Somerset, England, in 1866. They were accompanied on the voyage by Ann North, whom JK Burnett married in 1867. The Burnett family took up land at Burpengary. Several of the sons gained experience in the sugar mills around Caboolture and in the Tingalpa-Ormiston district, and became closely connected with the development of both the sugar and timber industries in post-Separation Queensland - on the north coast at Buderim Mountain, and at Wellington Point southeast of Brisbane.

From the early 1860s, Buderim Mountain had been extensively logged, principally for the fine stands of red cedar and white beech, which was shipped to Brisbane via William Pettigrew's wharf on the Mooloolah River. In 1870 the plateau was opened for selection. Many of the first selections were taken up purely for their timber resources [eg Pettigrew's and Grigor's selections], and early agriculturalists made an income from timber while clearing the land. By the mid-1870s, sugar cane was grown extensively in the area, with planters utilising South Sea Islander labour. Buderim Mountain sugar planters John Fielding and his son-in-law Joseph Chapman Dixon, established the mountain's first sugar mill in October 1876. At that time John Kerle Burnett and his brother Harry moved from Burpengary to Buderim to take up work at Fielding and Dixon's mill. JK Burnett's wife and young family arrived a few weeks later. Initially they resided in Thomas Ridley's house - most likely the small slab house which Ridley had erected on his selection [portion 45, parish of Mooloolah] by July 1874.

In November 1878, John Kerle Burnett purchased portion 49, parish of Mooloolah, for £15, obtaining the deed of grant in March 1879. The block was part of an earlier forfeited 40 acre selection, half of which [20 acres] had been reserved for school purposes in 1877, and the remaining 20 acres sold to Burnett. It was centrally located, adjacent to the school reserve, and at the intersection of two principal roads [now Main Street and Ballinger Road]. On part of this land Burnett built his family home [the present Pioneer Cottage], probably c1882/83. In the Caboolture Divisional Board Valuation Registers of 1881 and 1882, portion 49 is recorded as unimproved. There does not appear to be a record for 1883, but by 1884 the property was improved with a sawn house and stables - likely to refer to Pioneer Cottage. Early in 1882 JK Burnett raised a mortgage of £100 on the property, which may have been associated with the construction of the house.

The house was built of local timbers - tallow wood (eucalyptus microcorys) for floor bearers, white beech (Gmelina leichhardtii) for floors, walls, and ceilings and red cedar (Toona australis) for joinery - thought to have been felled on the property or acquired from nearby, and pit-sawn

and handcrafted to make boards. Bricks for steps and a fireplace were hand-made, probably from local clay. The core initially comprised a central hallway and 4 rooms - front parlour, front bedroom, rear dining room and rear bedroom. The latter was partitioned into two bedrooms at a some stage - some Burnett descendants believe it was always partitioned. A short time later two attic bedrooms were added. Early photographs of the house show external walls of deep boards and exposed timber stud framing, encircled by verandahs and resting on low stumps. The high-pitched shingled roof had a short ridge, and the verandah roofs, also shingled, were supported on plain chamfered timber posts. Glass and timber-panelled french doors opened onto the verandahs from all rooms. The first front steps were of timber, but had been replaced by 1907 with masonry steps. Between early 1907 and mid-1909, the verandah roofs were replaced with corrugated galvanised iron; later the whole roof was clad with iron. An external oven and chimney is shown in the earliest photograph, dated c1880, but later a detached kitchen wing was built.

In 1880 a second sugar mill - The Buderim Mountain Sugar Company Mill - was established by local growers, with financial backing from James Campbell and Sons. By 1884, JK Burnett had left his employment with Dixon and Fielding to take up the management of the Company mill, with his brother Ernest employed as sugar boiler. The mill was located below the present post office, a short distance from JK Burnett's home. At this period there were still only 7 farming families on Buderim Mountain: Fielding, Dixon, Guy, Caton, Lindsay, Coghill and Ballinger, but they were able to support two sugar mills. Buderim farmers appear initially to have made a good return from the Company mill. Between 1881 and 1884, many of the early slab homes were replaced with sawn-timber houses, and by the late 1880s a small village had developed around the intersection of the two principal roads on the mountain, with a state school, School of Arts, general store, blacksmith's shop, 3 or 4 residences, and the Buderim Mountain Sugar Company Mill. However, from 1885, legislation designed to curtail the employment of South Sea Islanders on sugar plantations forced most Buderim Mountain sugar planters to turn to alternative crops - principally bananas, oranges and other fruits. By August 1889 the Buderim Mountain Sugar Company Mill had closed, and JC Dixon was the only Buderim Mountain farmer still growing sugar cane on a commercial scale, sustaining his mill until 1896.

JK Burnett left the Company mill in the second half of the 1880s, possibly by 1887, and established the mountain's first general store, at the corner of Ballinger Road and Main Street. From 1 March 1892, operation of the Buderim Mountain Post Office passed from mill owner Joseph Dixon to storekeeper JK Burnett. Burnett also farmed nearby land.

The JK Burnetts were well known in the district and played an active role in their community. Ann Burnett was widely respected for her skills as a nurse and midwife, and as one of the principal influences behind the establishment of the Methodist Church on Buderim Mountain. JK Burnett was a member of the local School of Arts committee. Ann died in 1905, and her husband remained in the family home until his death in 1921. In his later years he was cared for by his son Edward Lionel Burnett, a saddler by trade. After his marriage in 1912, Lionel, with his wife Etta Low and family, continued to live in the Burnett home. Lionel Burnett was also well known in the district, for many years delivering milk and vegetables daily to the local community.

Title to subdivision 2 of portion 49, par Mooloolah, co Canning [19 acres 2 roods containing the house site] was transferred from John Kerle Burnett to Edward Lionel Burnett in mid-1921, just prior to JK Burnett's death. The Lionel Burnetts made some alterations to the property: in the early 1920s the two small bedrooms at the back were converted into one larger bedroom; in the 1930s the detached kitchen was demolished, the two corners of the back verandah were enclosed, and one of these was furnished as the new kitchen. Etta Burnett died in 1944, and her husband is understood to have left the place in 1946, renting it to the local postman. Following Lionel's death in 1950, his former home passed to his daughter Dorothea, who subdivided the property [Ballinger Crescent was created at this time] and offered it for auction in January 1953. The house was purchased by Miss Sybil Addison Vise, whose family had lived on Buderim Mountain since the early 1900s, and who kept the place as a rental property. In 1965 Miss Vise subdivided the house block yet again, and offered the former Burnett residence, on 22.2 perches, to the local community. The offer was readily accepted. Title was registered with the trustees of the Buderim War Memorial Centre [formerly the Buderim School of Arts], and in 1966 the Buderim Historical Society was formed to care for the place. Local service clubs such as Apex and Rotary assisted in the community restoration of the old Burnett home, which was opened as an historical museum by Premier Frank Nicklin on 23 September 1967.

The stumps, verandah posts and verandah flooring were replaced in the 1960s with similar materials; the earlier corrugated iron also has been replaced.

Description

Pioneer Cottage is located on a small parcel of land in a suburban street in central Buderim, on the high ridge which forms the spine of the plateau, facing northeast.

It is a modest, single-storeyed, exposed-frame timber building, constructed of pit-sawn and hand-dressed local beech [floors and wall and ceiling linings], red cedar [joinery], tallowwood [bearers and wall plates] and hardwoods [wall framing and roof structure], and set on low timber stumps. It has a steeply pitched roof, with corrugated iron covering the original shingle battens, and two dormer windows on the southwest side, opening from an attic space. The four-roomed core is surrounded by verandahs with simple chamfered posts supporting the verandah roofs, which extend from the main roof at a different pitch. These are unlined, and the early shingle battens are visible. French doors open from each room onto the verandahs.

The core has a modestly-sized central hallway, from which doors open off to the front parlour on the right, and the front bedroom and rear dining room on the left. The dining room has a fireplace, the brick chimney of which, formerly rendered, is now exposed. A narrow staircase leads from the hallway to two attic bedrooms, preventing any access from the hallway to the rear bedroom on the right - this is accessed from the rear and north side verandahs. Evidence in the fabric indicates that this rear bedroom was at some period divided into two rooms, both accessed from the verandahs. The rear [southwest] verandah has been enclosed with c1920s/30s weatherboards and timber casement windows, possibly in more than one stage. In the process, a small room has been created at each end of this verandah.

The internal walls are all lined, mostly with wide tongue and groove beech boards with a single bead. The hallway ceiling is of wide beech boards, but the remaining ceilings are of later, narrow tongue and groove boards, possibly indicating that the original ceilings were of calico. The attic rooms are lined throughout with narrow tongue and groove boards. The interior has a number of finishes: the walls of the main rooms and hallway painted or wall-papered [this appears to be quire recent]; the attic rooms unpainted; the joinery varnished; and the floors bare.

The house is surrounded by a small garden, most of which is recent planting. The palm stands at the front entrance may be associated with early planting evident in late19th/early 20th century photographs. The original service wing has been demolished. There is a slab hut at the rear of the house, moved to this site after 1965. The street frontage to Ballinger Crescent has a late 20th century post and rail fence, associated with the renovation of the place as a house museum. In the north garden is a large iron pan associated with the Fielding-Dixon Sugar Mill.

Image gallery




Location

Last updated 20 January 2016

Queensland Government (https://www.qld.gov.au/)

Appendix D - New Finds Procedure to Manage Archaeological Potential

Archaeological Discovery Protocol

Procedure For The Discovery Of Archaeological Material

An Archaeological item(s) is discovered during works

Stop Work!

1. **Mark and Protect the Item(s) and the Surrounding Area(s).**
   Place an exclusion zone around the item(s) and clearly mark the area(s).
2. **Notify the Site Manager.**
   Report the location and description of the item(s).

Work can continue elsewhere if it will not affect the item(s) and exclusion zone area(s).

Notify Project Archaeologist

Australian Heritage Specialists Pty Ltd
c/o Ben Gall 0476 272 273

The Site Manager to contact the Project Archaeologist (if not already on site). Include details of the location and nature of the item(s).

Human Skeletal Remains

1. **Notify Police**
   Refer to DATSIP's 'Guidelines for the discovery, handling and management of human remains'. Available at: https://www.datsip.qld.gov.au/resources/datsima/people-communities/cultural-heritage/guidelines-human-remains.pdf

Historic Artefactual Remains

1. **Project Archaeologist to Undertake Significance Assessment.**
   The archaeologist will attend the site as soon as possible (if not already on site) to assess the significance of the item(s) and recommend appropriate actions.

Underwater Wreck or Artefactual Find (Maritime)

1. **Project Archaeologist to Undertake Assessment.**
   The archaeologist will attend the site as soon as possible (if not already on site) to assess the item(s) and recommend appropriate actions.

Younger than 75 Years

Item(s) assessed by Project Archaeologist as younger than 75 years old

Follow the procedure for Artefactual Remains deemed 'Not Significant'.

Older than 75 Years

Item(s) assessed by Project Archaeologist as older than 75 years old

Follow the procedure for Artefactual Remains deemed 'Significant'.

Refer to: https://www.qld.gov.au/environment/land/heritage/archaeology/shipwrecks

Not Significant

For Item(s) which are deemed by the Project Archaeologist as not having potential State significance, formal notice to the heritage branch of the Department of Environment and Science (DES) is not required for the discovered item(s).

However, the item(s) will require suitable management actions, including recording as evidence. The Project Archaeologist should record the following:

a. GPS location.
b. X, Y and Z plot coordinates (easting, northing and elevation).
c. Description of the item(s) including form, material, dimensions, distinguishing marks (i.e makers marks and patterns) and an interpretation of age and function.
d. Photographs of the item(s) including details, contexts and scales.
e. An explanation of why the item(s) is/are not significant.

A copy of the above information it provided to the Project Manager and works can recommence.

Significant

The Item(s) potentially has/have State heritage significance (or greater).

1. **Notify DES**
   Contact the heritage branch of the Department of Environment and Science (DES) immediately:
   Email: Archaeology@des.qld.gov.au
   Phone: 13 QGOV (13 74 68)
2. **Submit Form**
   Complete and submit 'Notification of a Discovery Form' to DES. Available at: https://www.qld.gov.au/environment/land/heritage/archaeology/discoveries
3. **Do Not Disturb**
   Do not disturb the item(s) or exclusion zone area for 20 working days or until DES provides written permission and advice on how to proceed.

The Project Archaeologist and DES will negotiate further requirements for the item(s). This may include:

a. Protection and Avoidance
b. Excavation, Recording and Removal
c. Investigation and Preservation

These recommendations may require the preparation of a work method statement or scope of works in consultation with DES Heritage Branch prior to any action commencing.

No Impact

If works will not impact the item, they may recommence upon approval from DES and the Project Archaeologist.

POTENTIAL IMPACT

If works have the potential to impact on the find, work must not recommence for 20 business days OR until written consent is received from DES.

Reporting

Complete a final report in accordance with DES's Archaeological Investigation Guideline available at: https://www.qld.gov.au/_data/assets/pdf_file/0030/68628/archaeological-investigations-guideline.pdf

Submit a copy of any report with attached Archaeological Outcomes to the Project Manager and to DES (if required) within 20 business days of completion of work in the area.

Aboriginal Cultural Heritage procedures not included here, see https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-duty-care

Appendix E –Maintenance and Repair Guidelines (DES Technical Note)

Department of Environment and Heritage Protection

BUILDING SERVICES—MAINTENANCE AND REPAIR

This technical note provides information about the minor repairs to building services that are approved under the General Exemption Certificate—Queensland Heritage Places.

Background

Well-maintained services are essential to the proper operation of any building or place. Meeting the needs of contemporary users of a place often means the upgrading of older services or the careful integration of new services. This work requires architectural skill and sensitivity to minimise the impact on the significant fabric of registered places.

Repairs under General Exemption

Repairs to services approved under General Exemption are:

- repair of water, gas and electrical supply
- repair of telephone and other communication services
- repair and replacement of roof drainage, surface and subsurface sewerage and stormwater systems
- repair of fire detection and control systems, including smoke and heat detectors, fire sprinkler systems and associated alarms and communication systems
- repair of security systems and components such as fencing and surveillance systems that are present to maintain security appropriate to the nature and location of the place such as boundary and internal fences, gates and locking mechanisms; any electronic surveillance or alarm system; and any other system or component designed to ensure the security of the place or occupants
- repair of electricity, gas and heating systems including the replacement of non-original light fittings in original or later locations; the upgrading of wiring and the installation of new power boards and circuit breakers; and the repair of ventilation and air conditioning systems
- repair of water storages, dams, ponds, watercourses, batters, sea walls and other flood and erosion mitigation measures
- repair of lightning conductors.

Maintenance and cleaning

Carry out regular inspections and maintain services in good working order. Regular maintenance is the most economic and practical way of extending the life of a place and its services. Be mindful of damage or faults that may arise in services between inspections. Rectifying these problems promptly will limit further damage or decay and will keep maintenance costs down. Owners, occupants and staff should know how to operate, monitor and maintain equipment and know where maintenance manuals are kept.

Good practice

Good practices to adopt when undertaking repairs to services include:

- retaining as much as possible of the existing material
- using reversible processes where possible
- refixing replacement services in existing locations, or in better concealed locations if available
- reusing existing fixings, holes, openings, ducts, conduits, clips, brackets, etc wherever possible
- establishing checklists to ensure that all aspects of routine maintenance are completed
- recording works carried out—before, during and after.

Lighting and electrical work

Where original fittings no longer exist and there is insufficient photographic or documentary evidence to reconstruct them, install an appropriate contemporary fitting rather than an off-the-shelf recreated one. Although recreated fittings can provide the general impression of older fittings, often their scale, finish, lack of detail and craftsmanship impart an artificial and inappropriate appearance to a registered place.

Seek advice from an architect or lighting designer experienced in heritage conservation for the installation of new lighting in historic buildings. The atmosphere and character of the building can be enhanced or destroyed by clumsy lighting. Simple and efficient fittings are preferred as they do not date or look false. Compact modern low-voltage, high-efficiency light fittings are now available and are appropriate for older buildings.

Upgrading to modern standards

An older building may have a primitive lighting installation that has been altered and extended over time. Early installations with wood covers and later conduit with rubber insulated cables are likely to be defective and difficult to alter safely. Obsolete wiring, bad earthing, over-loaded cables and defective insulation are commonly present in older buildings. All installations should be checked and upgraded to modern standards by qualified electricians who have had experience working on historic buildings. Upgrading does not mean abandonment of significant fittings, switches and exposed cabling. Early switches may sometimes be reused by incorporating micro-circuit switching, and cotton insulated cable is still available.

New power outlets are best located on the skirting board and colour matched to joinery.

External lighting

The same design considerations for interior lighting apply to external lighting of registered places. Exterior floodlighting can achieve dramatic effects but should only be used in a subtle manner and is not approved by General Exemption.

Plumbing and drainage

Plumbing and drainage must always be well maintained. Some older buildings have pipes in walls, and wall movements can cause pipes to crack resulting in localised damp. Earth movements, tree roots or a lack of maintenance may cause sewerage or septic lines to fail. Blocked drains, or soggy patches in adjacent ground and associated odours are evidence of these problems.

New plumbing should be concealed wherever possible—under floors, in ceilings or in existing ducts, cupboards, service courts or lesser rooms. Try to conceal new plumbing on the exterior of a building or, where this is not possible, position it on a secondary facade and paint it the same colour as the wall if unable to conceal.

Older masonry buildings need to be thoroughly investigated to carefully identify suitable recesses for possible vertical passage of new conduits and pipes such as disused chimney flues.

Fixtures

Often early plumbing fixtures in kitchens, bathrooms and laundries have been replaced as these areas are under constant use and have a high demand for upgrading. Some early and original fixtures that survive are rare and if important to the significance of the place should be conserved. These fixtures cannot be removed under General Exemption.

Once broken or crazed, little can be done to repair early toilet pans. Ceramic or timber box cisterns can be relined with a metal trough and the valve rebuilt. Ceramic basins can be patched.

Other problems that might be encountered include failing floor coverings (in some cases a lead sheet surround) or the pan fixture becoming loose (particularly on timber floors). In these cases the lead sheet would have to be renewed by a plumber having skills in sheet lead.

This type of covering is usually formed into a tray by the use of battens to create an upstand. These may also need renewal. Re-fixing the pan to timber floors requires acid-resistant phosphor-bronze screws.

Lead supply pipes from the cistern to the pan can usually be maintained unless excessive movement has caused cracking which cannot be repaired by lead patching. Fatigue and creep in the lead work may make it economical to replace the pipework in brass or japanned metal. Reinstall decorative retaining brackets on exposed pipework.

Take care with lead repairs. The Lead Advisory Service Australia (www.lead.org.au) offers a free service to provide advice and support about any lead-related questions or concern that you may have.

Where pans set into tile work have become loose, carefully cut away the cement grouting and reset. Check the flush-pipe joint—it may be loose or damaged. Employ a licensed plumber to carry out the works as they will need to ensure that the soil pipe has been correctly vented when originally installed.

Ducting

Repairs to services must reuse existing ducting. The installation of new ducts is not covered by General Exemption.

Heating and air conditioning

Under General Exemption repairs can be carried out to existing heating and air conditioning services to maintain their function and operation.

Air conditioning systems must be accessible for maintenance and should be visible for easy inspection. Prepare routine maintenance schedules for air conditioning systems that require changing and cleaning of filters, vents and condensation plants to control organic growths. As an air conditioning system ages parts are likely to fail. As they deteriorate this may result in inadequate ventilation to some areas which may then smell musty and wall surfaces may show staining, wet patches, bubbling or other signs of moisture damage.

If it is proposed to upgrade or install new heating and air conditioning systems in a registered place see General Exemption technical note: Building services—upgrades and installation, or contact the department to discuss the level of approval required.

Lifts and fire stairs

Existing lifts and fire stairs should be regularly maintained and repaired. If it is proposed to install new lifts or fire stairs in a registered place contact the department to discuss the type of approval required.

Sprinklers, fire and security controls

Owners of registered places are urged to protect their valuable assets by installing fire detection and alarm systems. Many older buildings are destroyed by fire because timbers are often dry and brittle and burn quickly. Old rubber wiring is a common cause of fire and should be replaced and circuit breakers added. Auto fire alarms and sprinklers are essential backup devices and should be regularly inspected. Seek advice from appropriate fire services consultants, authorities and the department about devices and installation suitable for your place.

Services checklist

Do:

- have a regular maintenance program to extend equipment life and to ensure proper performance
- use shutters, operable windows, curtains, awnings, shade trees, and other historically appropriate non-mechanical features to reduce the heating and cooling loads
- retain and upgrade existing systems whenever possible
- improve energy efficiency by installing insulation in ceilings
- retain decorative elements of a historic services system including switch plates, grilles, radiators and fans—be creative in adapting these features to work within the new or upgraded systems
- use existing conduits, ducts, chases, cupboards and shafts for new systems
- design climatic control appropriate to the space, for example, hidden systems for formal spaces, more exposed in industrial spaces, or secondary spaces
- select less visible areas, such as basements, ceiling spaces, under floors or secondary areas and elevations for the location of services
- maintain appropriate temperature and humidity levels to meet accommodation requirements without accelerating the deterioration of the building's materials (monitoring schedules can be set up if concerned)
- train staff to monitor the operation of equipment and to act appropriately in the event of emergencies or breakdowns
- have an emergency plan for the occupants, buildings, structures and any objects contained within in the case of serious malfunction or breakdown.

Do not:

- install a new system if it is not needed
- switch to a new type of system unless there is sufficient space for the new system or an appropriate place to put it
- over-design a new system, for example, don't add climate control if not absolutely necessary
- make openings in registered building walls to add through-wall heating and air-conditioning units as these are visually disfiguring and destroy historic fabric (condensation run-off can further damage historic materials)
- damage historic finishes, mask historic features, or alter historic spaces when installing new systems
- drop ceilings or bulkheads across window openings
- seal operable windows

- place condensers, solar panels, stacks, vents, plant or other equipment on visible portions of roofs or at significant locations on the site
- overload the building structure with the weight of new equipment
- place stress on historic building materials through the vibration of new equipment
- allow condensation on windows or within walls to rot or spall adjacent historic building materials.

Appendix F –Roof Guidelines (DES Technical Note)

TECHNICAL NOTE

Conserving Roofs

This technical note is provided as general, 'best practice' advice for conserving places of heritage value. It is not exhaustive and is not to be taken to legitimise works carried out without the necessary approvals.

For information about work that may be done without application, refer to General Exemption Certificate: Queensland Heritage Places, available on the EHP website at www.ehp.qld.gov.au

Prepared by: Heritage Branch, Department of Environment and Heritage Protection

Acknowledgment

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Prepared March 2014

Version 1.3

#30250

Contents

Technical Note

INTRODUCTION—CONSERVING ROOFS

Purpose

This series of technical notes is designed to help owners and managers of heritage-listed buildings understand the characteristics of their particular building in relation to the care, and where necessary the repair, of its roof.

The word roof is used in two different senses; the supporting structure that spans the building and holds up the protective covering, and the protective covering material. These notes describe, individually, the types of roof coverings found on heritage-listed buildings in Queensland and outline conservation issues associated with them in the following sections:

1. Metal roofs—deals mainly with corrugated galvanised iron and steel but also includes copper, zinc and lead coverings.
2. Asbestos cement roofs—considers the problems posed by asbestos in the context of heritage-listed buildings.
3. Terracotta tiles, slates and shingles.

The need for a supporting structure and the means of rainwater disposal is common to all roof coverings. The individual characteristics of the coverings determine, to some extent, the detail of the rainwater goods and the type of structure required to support the roof. Conservation issues associated with disposing of rainwater and supporting various installations on the roof are discussed in the following sections:

4. Roof drainage—common to all roofs.
5. Roof structure—timber, steel or a combination of these materials make up the roof structure of most heritage-listed buildings.
6. Roof installations—aerials, satellite dishes, air conditioning units, solar panels, safety systems etc.

Context

The roof may be considered to be the most important part of the building. Even without walls, a roof can be used as a shade structure or to provide protection for produce, materials or equipment. It excludes sun, wind and rain, and protects and preserves the materials that comprise the lower parts of the structure.

In the early days of the European settlement, roofs were first covered with bark, and later with shingles split from trees such as Forest Oak (casuarina torulosa) and Ironbark (eucalyptus fibrosa). Shingles required a steep pitch. They were widely used, however their lifespan was comparatively short and few shingle roofs have survived intact today. Shingles were often simply sheeted over with corrugated iron when this material became available. The tradition of relatively steep pitched roofs was continued well into the 20th century when new materials made lower pitches more economical.

The roof of the Victorian house often drew attention to itself with varied forms, steep pitches, gables and decoration

In the Queensland climate, the need to quickly dispose of rainwater and give shade has given rise to roofs of strong visual character. The profiles of the roof ridges against the sky and spreading, lower-pitched verandah roofs are significant architectural features that must be handled with care when carrying out conservation works. These 19th and early 20th century roof forms were often celebrated with decorative elements such as cast iron cresting on ridgelines and turned finials at gable ends. Functional installations like ventilators were similarly decorated to take advantage of their location at high points of the roof.

Corrugated galvanised iron or steel sheets are the most common form of roof covering found in Queensland. It is comparatively light, easy to transport and requires only basic framing for support. It provides a good surface for collecting water, an important consideration in Queensland.

Not as common as corrugated iron, but characteristic of many suburbs in Australia, is the orange-red colour of terracotta roof tiles. The Marseilles pattern tile, introduced first in 1886, was most popular during the Federation period and is still being manufactured.

Even less common than tiles in Queensland are natural slate roofs. Slates were imported from England and Wales and, being an expensive option, were only used on prestigious buildings.

Asbestos cement first made its appearance in Australia as an imported roofing slate early in the 20th century. These slates were being produced locally by the 1920s. The greatest use of asbestos cement came in the post war years—1945 to 1970—in the form of the 'super six' roofing sheet, marketed as a low cost, fire-proof, durable material. Some heritage-listed buildings, both domestic and commercial, still have asbestos cement roofs. Although asbestos-containing products are now banned, existing roofs are not hazardous unless damaged or decaying. Removing or treating asbestos products may only be undertaken by licensed contractors.

Roofs have, over the years, become the home of a variety of installations deemed necessary for everyday life and which the structure was not designed to support. These installations range from air conditioning plant to photovoltaic panels. Apart from their likely negative affect on the appearance of the place, and hence its heritage significance, there are concerns for structural adequacy and the likelihood that the installation will be a source of leaks.

Work carried out on the roof must be done safely. On high or complex roofs, this may require installing safe access routes or at least fall arrest and restraint systems.

When it becomes necessary to replace or carry out extensive work on the roof covering it may be appropriate to consider installing insulation and sarking. Sarking adds a second line of defence against roof leaks and insulation will improve the thermal efficiency of the building. Care must be taken to ensure that problems such as condensation are not created in vulnerable spaces by the installation of insulation and sarking.

Technical Note

1. METAL ROOFS

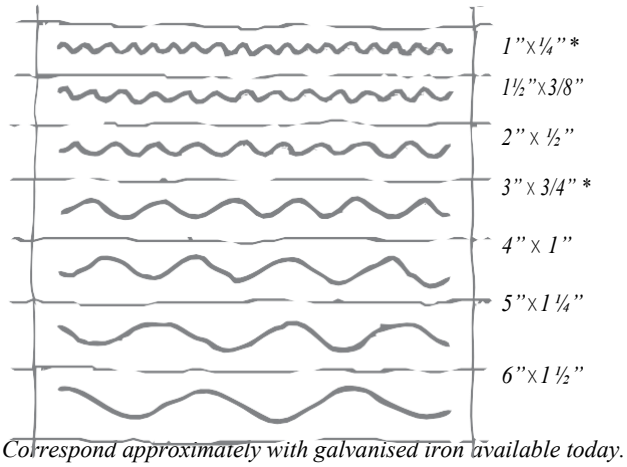
Purpose

This section describes the characteristics and conservation issues related mainly to corrugated galvanised iron and steel roof coverings. Other sheet metal coverings are dealt with, but in less detail.

Keeping the roof watertight is critical as roof failure can have serious consequences for the rest of the building. A faulty roof can lead not only to damaged ceilings and internal finishes but can also result in structural decay of elements within the building.

Prolonging the life of a metal roof

As a leaking roof is a major source of building damage, it is vital to keep it watertight. Faulty flashings, blocked valley gutters or downpipes and rusted roof sheets can all cause leaks. Water can gain entry where loose or missing fixings have allowed side laps to lift or become distorted. Faulty joints around flues, vents, skylights and chimneys can also cause problems. It is good practice to keep the roof free of debris. Frequency of cleaning will vary depending on the pitch of the roof and the amount of debris that collects. Excessive walking traffic on the roofing sheets will result in flattened corrugations, loosened fixings and general deformation. Check regularly to ensure that the roof sheeting is well nailed or screwed down.



* Correspond approximately with galvanised iron available today.

Galvanised iron sections as illustrated in Lysaght's Referee and Storekeeper's Guide 1906

Corrugated galvanised iron

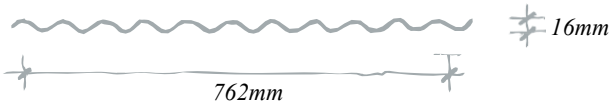
The common term 'corrugated galvanised iron' is used to describe two different materials—galvanised wrought iron and galvanised mild steel. Until the end of the 19th century, all corrugated metal sheeting was made from wrought iron. After that time, mild steel replaced the iron as steel processing techniques improved. Early production of galvanised corrugated iron relied on imported sheet iron and it was only in the 1920s that large-scale production began in Australia.

Although iron and steel are stronger than other common metals, they corrode readily in air and water, and their use as a durable building material became possible only with the protection provided by galvanising—immersion in molten zinc. A thin coating of protective zinc bonds to the iron or steel base by a series of iron-zinc alloy layers. The zinc corrodes slowly and, in the process, produces a relatively non-porous and stable protective coating to the steel.

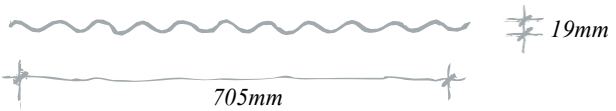
Since about 1850, corrugated galvanised iron and steel have been widely used in Australia, becoming identified with the Australian vernacular tradition. Corrugated sheeting is strong enough to span between battens without sagging. The corrugations of the sheets available ranged from 5 inches (125mm) to 1 inch (25mm) with 3 inches (76mm) and 1 inch most commonly used. Sheets were available in lengths up to 12 feet (3.6 metres). These short lengths of weathered, galvanised roofing sheets, with their prominent lead head nail fixings, provide the patina important to Queensland's cultural heritage.

Lysaght's 'Orb' branded corrugated sheets have been produced in Australia since 1921 and Custom Orb® and Custom Blue Orb® are still available. Although close to the original in appearance, the profile of the sheet has changed in the following respects: the depth of the corrugation has been reduced from 19mm to 16mm and the curve of the corrugation changed from the original circular curve to a sine curve. Custom Orb® sheets are now only available in Zincalume® and COLORBOND® finishes. Zincalume® is a coating alloy introduced in 1976 containing 55% aluminium, 43% zinc and 1.6% silicon. It has become the most common metallic roofing material available in Australia, and Zincalume® sheets are available in a pre-painted finish known as COLORBOND®.

The only zinc-galvanised corrugated steel still produced and is available as S-Rib Corrugated™ from Fielders with a Z450 (Galvanised) or Z600 (Heritage Galvanised) finish. The latter is a heavier 'double dip' zinc coating. If the sheeting is to be curved, a thicker sheet of 0.60 base metal thickness (BMT) is required. The standard thickness is 0.48 BMT.



Fielders S rib corrugated, standard corrugated sheet



Fielders Heritage barrel rolled sheets formed on a restored 75-year-old press

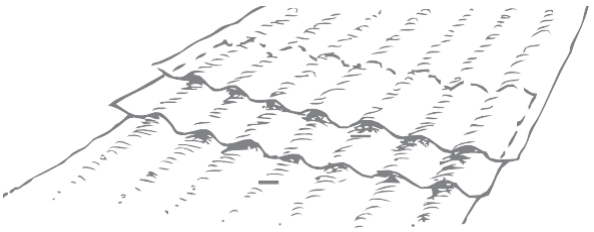
Galvanised iron roofing sheets currently available

Using a restored barrel press, Fielders also produces a Heritage Galvanised corrugated sheet with the original 19mm deep corrugation and profile in lengths up to three metres.

Lysaght also produces its thicker 0.60 BMT Custom Blue Orb® sheet with a galvanised finish, suitable for curving and for use in rainwater tanks.

Repairing corrugated galvanised roofs

- Patching small holes can extend the life of a sheet. The traditional technique is to lead solder a patch of iron over the hole.
- When lap sheets have rusted around their fixings, inserting a slip-sheet can extend the life of the roof covering. This can be a short length of matching, profiled, corrugated sheeting inserted between the sheets at the rusted lap joint. It protrudes 100mm below the lap joint and is secured on the adjacent corrugation.



A slip sheet inserted between sheets at the rusted lap joint

- Corrugations in sheets that have been damaged may be repaired by re-rolling. Some sheet metal firms may still have rollers of the correct dimensions. When replacing sheets look at the underside for brand names—this may help date any repairs or alterations made to it.
- Where a few sheets or a small section of roof sheeting need replacing, do so with material matching the profile and appearance of the existing sheeting. Second-hand sheets may be appropriate. If it is not possible to match the existing sheeting, and new sheeting is required, move the sheets around on the roof so that complete pitches or sections are of sound, older material while other pitches or sections are of the new sheeting.
- Where the patina and checkerboard pattern of corrosion on a roof is considered important as part of the cultural heritage significance, repair rather than replace sheeting.
- Complete replacement of roof sheeting may be necessary if decay or damage is extensive. Replacement roofing sheets should match the originals.

Materials—compatibility and appropriateness

Where repair or replacement is required, repair materials should match the existing. Modern alternative metal sheeting may differ in sheet length, surface finish, corrugation size, profile and dimension. Galvanised steel is still manufactured in Australia and is available in a range of profiles, thicknesses and strengths, and in several weights (thicknesses) of zinc coating.

Zincalume®, the modern-day equivalent coating to zinc galvanising for steel, has a different surface texture and retains its gloss much longer than zinc. The gloss finish is out of keeping with the matt appearance of traditional galvanising.

Zincalume® sheeting and zinc-coated materials should not be used together where rainwater runs from Zincalume® onto zinc-coated surfaces, electrolytic action causes the zinc coating to dissolve. There are similar concerns where Zincalume® is used with lead flashings. Replacing a roof in Zincalume® therefore requires removing existing guttering and flashings.

Sheet lengths

Modern production methods enable corrugated sheeting to be produced in much longer lengths than earlier sheeting. The availability of the longer sheets allows roofs to be covered in single-sheet lengths with no overlapping transverse joins, eliminating a major potential source of corrosion.

This has advantages for vulnerable roofs, but the practice needs to be weighed against the change in appearance that full-length sheets will bring. On steeply sloping roofs comprised of short sheets, the joins can be seen due to the shadow of the overlapping sheet and, less obviously, the additional nailing needed at the join. These provide a distinct horizontal element to the appearance of the roof and their loss may change the heritage significance of the roof. Where roofs are not readily visible the use of full length sheets may be appropriate.

Colour

Matching the colour of a painted roof is relatively straightforward as the new roof may be painted in that colour. Maintaining a sound paint film prolongs the life of corrugated roofing even when much of the zinc coating has been lost from the sheet. Rust converters, alkyd-based primers containing anti-corrosive pigments, and special primers for use over zinc coatings are readily available.

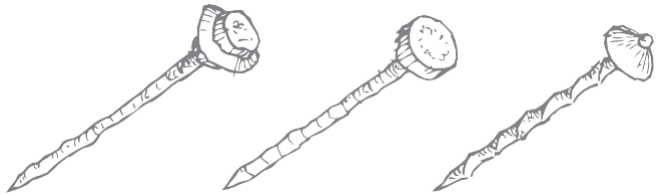
When replacing a previously painted roof, an approximation of the original colour may be found in the range of COLORBOND® finishes that are available for corrugated sheeting. The colour match is unlikely to be close and COLORBOND® weathers differently from traditional roof paints.

The colour of weathered, unpainted galvanised sheets cannot be matched by Zincalume®, which is both glossy and does not weather to the dull grey of the traditional finish. While new galvanised steel is very bright, it soon weathers to the dull grey we associate with galvanised iron buildings.

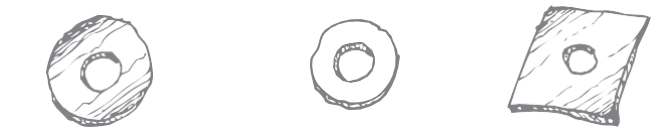
New galvanised steel has a thin coating of oil. Normally this weathers off and the sheeting may be painted after several months. If it is to be painted immediately, the roof should be washed with a detergent such as sugar soap, then rinsed with fresh water. A system based on acrylic primer and top coat may then be applied.

Fastenings

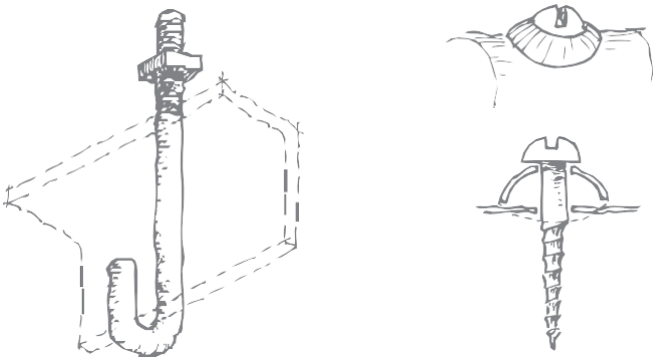
As with sheet lengths, the appearance of the roof is affected by the type of fastening. The horizontal lines of fastenings formed by traditional lead-headed nails, spring-head nails or slot-headed roofing screws and washers often contribute to the heritage significance of the building. These fasteners should be used for repairs and replacements, at least in those visible parts of the roof. Where the nail holes have become enlarged, and the nails do not hold, it may be necessary to use screw fixings.



Leadhead nail (19th century) | *Leadhead nail (modern)* | *Springhead nail*



Round curved washer | *Flat washer* | *Diamond curved washer*



Hook boolt for fixing to steel roof truss | *'Limpit' washer and roofing screw*

Various fixings for corrugated sheeting

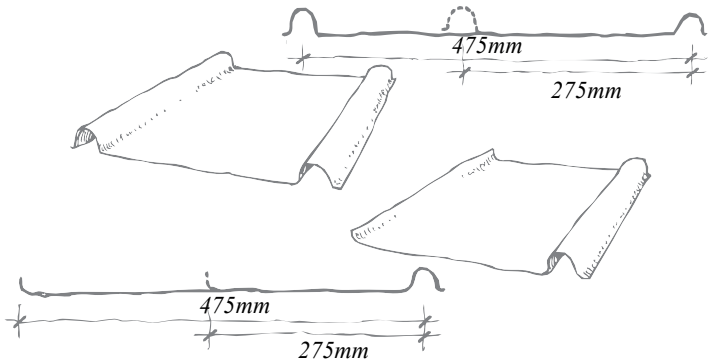
Decorative and other features

Roofs were often finished with decorative elements. Ridge lines often featured cresting of cast iron or decoratively cut galvanised sheet iron. Gable ends invariably featured finials, usually of turned timber. Acroteria formed from decoratively cut galvanised sheet iron were often located at the corners of gutters. Roof ventilators were essentially functional but, being located at the highpoint of the roof, their decorative potential was often exploited in elaborate detail.

These features were an essential part of the aesthetic of the roof form and should be retained and repaired as necessary. Lost features may be readily replicated where good photographic evidence of their appearance exists. Speculative embellishments, however, should not be attempted.

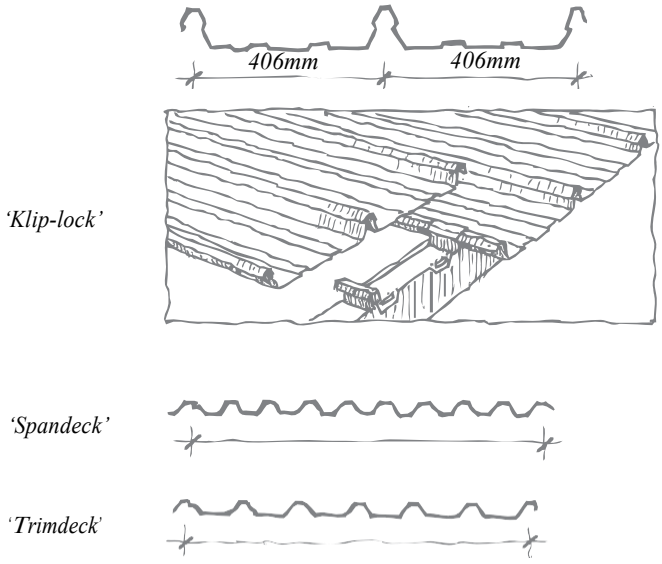
Other galvanised steel profiles

- Typically corrugated iron has a rounded profile (e.g. sheets with eight 76mm corrugations and a 19mm depth), but during the late 19th century a variety of profiles were available from different manufacturers. Their corrugations varied from 76mm to 127mm and the depth varied from 16mm to 38mm. The larger profiles were stronger and had a greater spanning ability, allowing wider coverage with wider support spacing. This was useful on larger buildings where the sheeting had to be fixed with ease and speed.
- Ripple iron is a smaller profiled corrugated sheet commonly used to clad window awnings, walls, ceilings and sometimes the building exterior. It does not have the strength of traditional larger profiled corrugated iron and is not suitable for roofing or foot traffic. A modern equivalent is manufactured today as Mini Orb® but it has a flatter profile.



Roll and pan roofing profile produced by Fielders as 'Neo Roman'

- Another common galvanised iron roofing profile found throughout Australia is the roll and pan (known variously as rib and pan, iron roof tiles, Queensland Government profile). This is essentially a sheet of galvanised iron (approximately 475 mm by 900 mm) with a rolled edge and an up-stand (or another roll) on the opposite edge. They were laid as tiles fixed to the battens or, less often, on boarded roofs. Roll and pan profile was widely used on government buildings in Queensland from the late 1890s where the roof was an important element in the architectural composition.
- Roll and pan roofing is susceptible to the same problems of decay as corrugated sheeting, namely corrosion at overlaps and loose fixings. Finding replacement tiles can be more problematic as sizes and profiles of the original tiles varied with manufacturer. Replacement tiles can be replicated from heavy gauge galvanised iron by a sheet metal worker. Fielders produces a Neo Roman® roll and pan profile tile based on tiles typically used in Queensland. Neo Roman® profile is made in various finishes including the Z600 Heritage Galvanised.
- During the 1960s, several new roofing sheet profiles were introduced. These were roll formed from coil strip enabling continuous sheets of up to 12m lengths to be produced. Similar in concept to the traditional corrugated sheet, these products (Spandeck® and Trimdeck®) have a trapezoidal profile quite different in appearance. A more innovative product was the Klip-Lok® 'Sixteen' that had three ribs 41mm deep. When fixed, the side ribs of adjacent sheets interlocked and did not require additional fastening making it especially suitable for near-flat roofs.

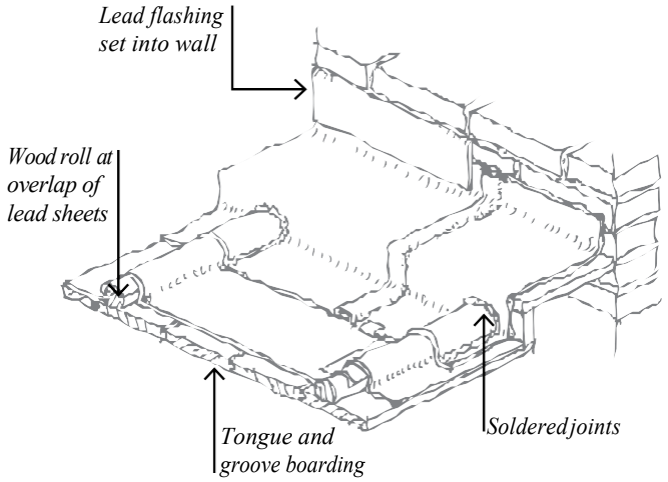


Steel roof deck profiles introduced during the 1960s and still in production (although no longer galvanised)

- These new profiles have on occasion been inappropriately used as replacements for corrugated sheets on heritage-listed buildings. The effect of the angular, trapezoidal profile is much harsher than the gentle curve of the corrugated original. Where these new profiles have been used on buildings of the 1960s through to the present day, they are quite appropriate and feature on heritage-listed buildings of the later 20th century. All are still produced but are no longer available in a galvanised finish.

Non-ferrous metal roofing

Zinc, copper and lead sheeted roofs are also found in Queensland, usually on larger, public buildings. Although comparatively expensive, these metals are durable. For this reason they were often used on prestigious buildings and to clad spires or domes as they require little maintenance. A well-laid lead, copper or zinc roof could be expected to last for 150 to 200 years.

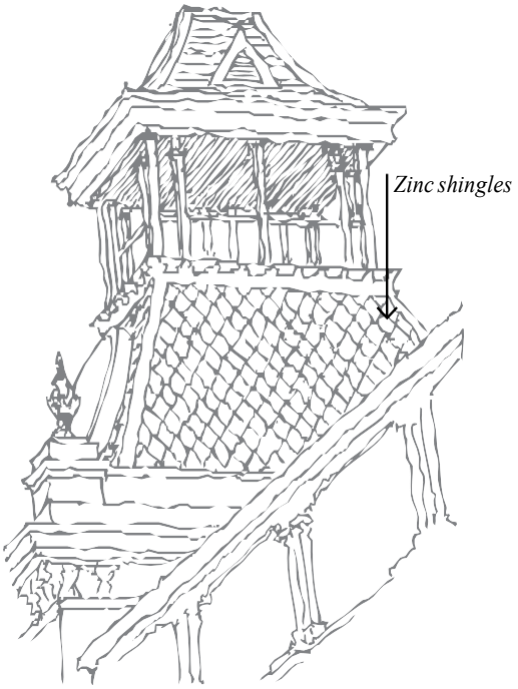


Lead roofing sheet at junction with parapet wall

The metals are laid in sheets on to a tongue and groove boarded roof. Zinc and copper sheets usually have standing seam joints while the softer lead sheets have rolled or folded joints.

Because of their durability the cause of leaks in these roofs is most likely to be a result of mechanical damage. Once the metal covering is penetrated the resulting leak may not be immediately apparent and can decay the boarding supporting the metal.

Zinc or copper shingles were sometimes used to clad steeply pitched roofs.



Zinc interlocking shingles—applied to tower as a low maintenance decorative finish

Repairing non-ferrous metal roofing materials

- Inspect roofs after rain as small holes in the lead will be more visible and areas liable to ponding will be apparent. Leaks will not necessarily be apparent directly under the damaged metal as the water may travel between the metal and the boarding for some distance before emerging.
- Repair of damaged lead roofing should only be by lead-burning (welding) carried out specialist trades people. Solder should not be used. Similarly, copper and zinc repairs should only be carried out by specialist trades people.
- Replacement tongue and groove boarding must be secret nailed (plywood is used more frequently today to support sheet metal roofs).
- Due to galvanic action, copper is affected by water running off aluminium. Aluminium, steel and galvanised fasteners must not be used on copper sheet—only copper nails should be used. Run-off from copper sheet will corrode aluminium and steel guttering. Lead and steel in association are unaffected.
- Zinc sheet may be repaired by solder, but as it is thin, piecemeal repair is not advisable. Fixings must be galvanised.

Technical Note

2. ASBESTOS CEMENT ROOFS

Purpose

This section provides owners of heritage-listed buildings with an overview of asbestos cement roofs. Asbestos materials may be found in heritage-listed buildings and can represent a serious health risk if they are not handled safely. This technical note includes references on where to find information on legal requirements and safe work practices, a brief history of the introduction of the material into Australia, how to identify asbestos cement roof products, and notes on maintenance, repair and painting.

Context

Asbestos is a naturally occurring mineral which has excellent durability, fire resistance and insulating properties. Asbestos cement roof products, made from asbestos fibres bonded in cement, were introduced into Australia as early as 1903 and, though they are less common after 1980, they may be found in buildings constructed up to 1990. They are especially common in houses built during and after World War II when a materials shortage led to a boom in the use of the material. Asbestos cement roof products included roof cladding, rainwater goods and other roof accessories. Asbestos cement roofing is commonly referred to as 'fibro', 'asbestos cement', 'AC sheeting' or 'Super Six'.

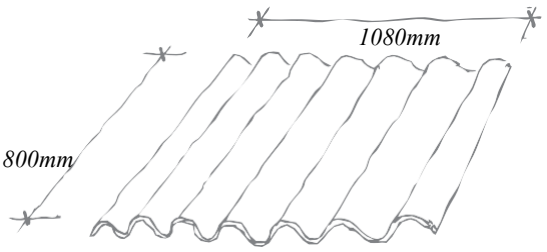
Inhaled asbestos fibres are a proven cause of life threatening illnesses including Asbestosis, lung cancer, and Mesothelioma. However, current scientific and medical evidence indicates that asbestos cement roofing in good condition does not represent a health risk while the fibres remain bound within the material. A health risk arises if fibres are released as a result of severe weathering, damage or unsafe work practices.

Due to the associated health risks, the department recommends that owners use tradespeople who are licensed to carry out work on asbestos cement. If owners remove asbestos cement illegally or unsafely they may be subject to legal action including 'on the spot' fines. See the Queensland Government websites on asbestos listed in the references.

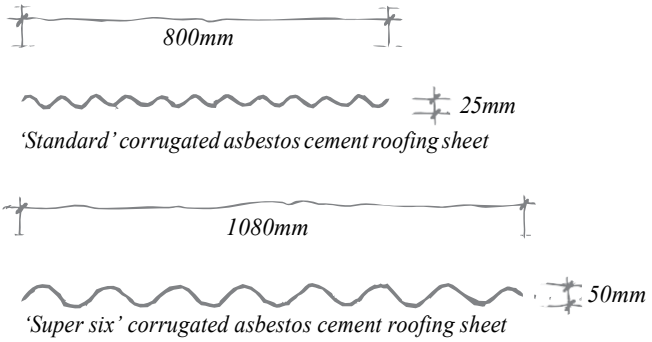
Historical introduction of asbestos cement roofing

Corrugated asbestos

Imported corrugated asbestos cement sheeting was available in Australia by 1914. Australian manufacture began in 1917 with James Hardie and Co's 'Fibrolite' corrugated sheeting and, by 1926, Wunderlich were manufacturing 'Durasbestos' corrugated sheets. Both companies subsequently introduced additional profiles: Hardie's 'Super Six' profile with deeper corrugations than their standard sheets (1926), Wunderlich's deep corrugated Durasbestos (1935), and Hardie's 'New Contour' (mid-1950s).



'Tuskan' tile—'Super six' sheets in short lengths and produced in various colours, laid as tiles



'Standard' corrugated asbestos cement roofing sheet

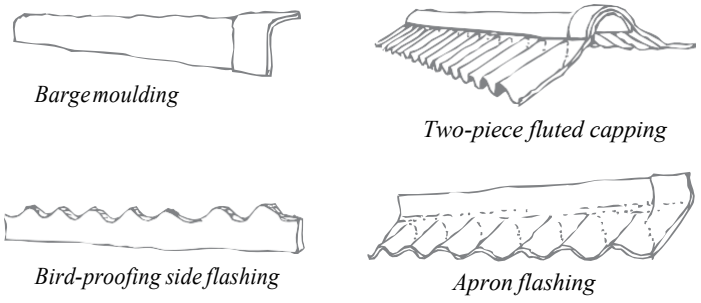
'Super six' corrugated asbestos cement roofing sheet

Most common asbestos cement roofing sheets

In 1969, CSR took control of Wunderlich and gradually phased out their interests. Finally, in 1977, James Hardie acquired the Durasbestos factories giving them a virtual monopoly on fibre cement manufacture in Australia.

Asbestos slates and tiles

Asbestos cement slates were first imported by James Hardie in 1903. By 1907 their range included slates in purple, blue, red and grey in various sizes and thicknesses. The earliest known examples of asbestos cement slates in Queensland date to 1908. Hardie began manufacturing slates in Australia in 1917.



Some typical asbestos cement roofing accessories

Wunderlich introduced asbestos cement 'Tropical' Roofing Tiles in about 1938. These were deeply corrugated sheets, 2 feet 6 inches (0.75m) long and reddish brown in colour.

Identifying asbestos cement roofing

Roof products containing asbestos include the following:

- corrugated sheets
- roof slates and tiles
- ridge capping
- ventilating ridges and other kinds of roof ventilators
- skylights and manholes
- flashing
- mouldings
- gutters and accessories
- downpipes
- vent pipes
- flue pipes
- soffit sheeting
- water proofing membrane
- spray on vermiculite insulation material.

Unpainted asbestos cement roofs are usually dark grey in colour and the material thickness is 5mm or more. If in doubt, have the product tested. Contact the National Association of Testing Authorities at www.nata.asn.au to obtain information about laboratories that test building materials for asbestos.

Maintaining an asbestos cement roof

Do not disturb asbestos cement roofs in good condition. Restrict maintenance to:

- regular inspections to monitor the condition of the roof
- checking and refastening fixings as required.

Use binoculars in preference to walking on the roof to carry out inspections. Asbestos cement sheets become very brittle with age and may crack, leading to leakage and possible release of asbestos fibres.

Do not clean asbestos cement roofs. Owners should note that it is illegal to use high pressure water as it can destroy the surface of the material releasing asbestos fibres. Consider applying a fungicide followed by a sealant as an alternative to cleaning.

Repairing and replacing asbestos cement roofs

Do not carry out work on asbestos cement roofing material unless it is no longer water-tight, or a health risk because it has become friable and may release asbestos fibres.

When fitting new roof elements or an entirely new roof, match the appearance and profile of the original material as closely as possible with materials that do not contain asbestos. For example:

- asbestos cement tiles may be replaced by concrete tiles of a similar appearance
- corrugated asbestos cement sheeting may be replaced by corrugated steel or fibreglass of a similar profile
- asbestos cement slates may be replaced with fibre cement slating.

Asbestos free fibre cement sheeting in a variety of forms is also available.

Painting

Only paint asbestos cement roofs that are in good condition. Damaged or badly weathered asbestos cement should be safely removed by a licenced tradesperson in compliance with legal requirements as described previously. If you decide to paint a roof, replicate the existing paint colour or reinstate the original colour.

Do not paint an unpainted roof. Unpainted asbestos cement roofs are safe if they are in good condition. The roof can be protected by applying a clear sealant that does not alter its appearance. Choose a sealant specifically designed for asbestos cement products that has a life of 10 years or more and can be applied over existing finishes.

When preparing and painting the roof, follow the safe working procedures recommended by the Queensland Government. It is illegal to use dry sanding or power tools on asbestos cement. Where possible, retain the existing paint and apply the fresh coat over the top.

Technical Note

3. TERRACOTTA TILES, SLATE AND SHINGLE ROOFING

Purpose

This section deals with roofing made up of small units, as distinct from sheeting, which is covered under the metal roofs technical note. While metal roofs are most common in Queensland, slate and terracotta tiles are also found on earlier buildings. Timber shingles were widely used but few have survived intact. This technical note reviews the most common damage found on these roofs and identifies appropriate repairs.

Keeping the roof watertight is the first duty of the owner or maintenance manager, as roof failure can have serious consequences for the rest of the building. A poorly performing roof can damage ceilings, discharge water over walls and at the base of the building, leading to rising damp and settlement cracking. Watertightness is achieved by overlapping the small units, the overlap needing to be sufficient to cope with water being driven up the roof by wind. The steeper the roof the smaller the overlap needed to keep the water out.

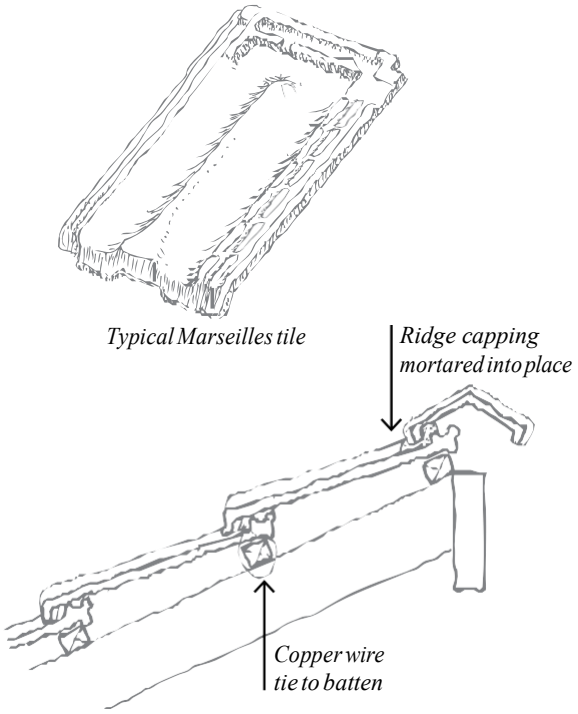
Where roof slopes meet other slopes at hips or valleys, or vertical elements such as parapets and chimneys, gutters, cappings and flashings are required. These meeting places will concentrate water and must be well protected.

Terracotta roof tiles

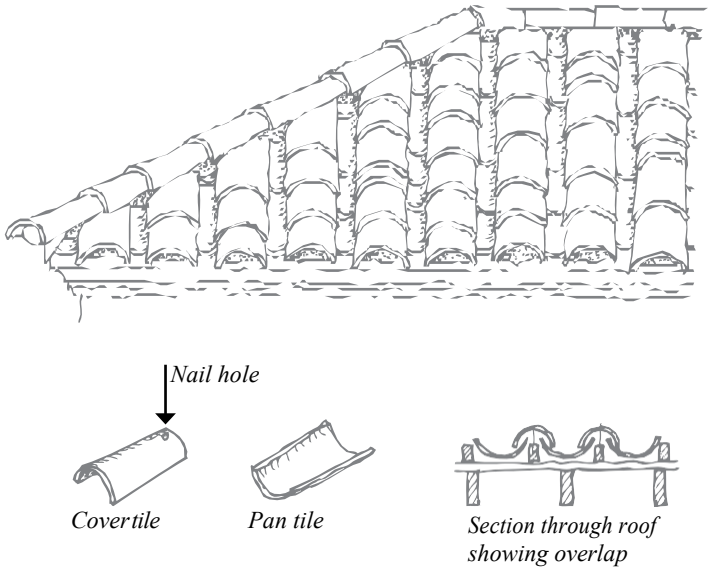
Various terracotta tile profiles can be found on Queensland roofs, mainly in the state's south-east. The most common is the Marseilles patterned tile. Originating in France, they were first imported to Australia in 1886. They were popular in the early 20th century throughout Australia, becoming a feature of Federation-style buildings. Along with other profiles such as the Spanish Mission and Cordova tiles, they were produced locally after the First World War. The orange-red colour of terracotta tiles has given many Australian suburbs their distinctive appearance.

Terracotta tiles were made in stack kilns, in a similar way to bricks. The process resulted in different degrees of firing, varying from overburnt to underburnt. Glazed tiles had the salt glaze applied by hand, resulting in variations in thickness of the glaze. The manufacturing process thus resulted in natural variations in the tiles' colour. As processes improved, these variations have been progressively eliminated and modern tiles are very uniform in colour—this may make them less suitable for re-roofing on an old building.

There are two types of terracotta roofing tiles: interlocking and overlapping. Interlocking tiles (such as the Marseilles tile) hook over a lip on the lower tile, securing the two together. They are shaped to hook over the battens, but also have holes that allow them to be fixed to the batten with copper wire. Overlapping tiles (such as the Spanish tile) generally do not have a lip and are nailed in place. The Spanish tile, where one half-cylinder overlaps another to form a cover and pan, requires vertical battens to which the cover tile is nailed.



Interlocking roof tile—'Marseilles' tile



Overlapping roof tile—'Spanish' tile

Ridge tiles were made to match the roofing tiles and were secured with mortar. More elaborate Federation-era buildings featured decorative terracotta finials and ridge tiles.

Prolonging the life of terracotta roof tiles

As with other roofs, regular and consistent maintenance is the most effective way of extending the life of a building's roof and helps conserve significant fabric. Avoid walking on tiled roofs—where access is required, make use of a 'cat ladder' to spread the load.

Inspect the roof regularly and look for any tiles that appear to have slipped or broken. Under-fired tiles are more porous and prone to decay. Decay usually occurs below the laps and will be most noticeable from inside the roof space. Inspect flashings and valley gutters for deterioration and keep them free of water-trapping debris.

Terracotta tiles benefit from maintenance washes to prevent surface dirt deposits and mould. The least harmful method is to spray with hot water before gently scrubbing the surfaces with hot water and a neutral pH soap. Scrub with a compact bristle-headed brush. Abrasive powders and powder-based detergents should not be used.

Repairing a tiled roof

Always repair rather than replace. The life of an early terracotta tiled roof can be extended by thoughtful repair, and by replacing only what is needed.

Only a roof tiler experienced in conservation work should carry out repairs on the tiled roof of a heritage-listed building.

Inspection of the roof will have revealed defective, damaged or broken tiles and any problems with cappings, flashings and gutters.

- Terracotta tiles frequently outlast their fastening systems. Where the fastening system has failed, it may be necessary to strip the roof and re-lay the tiles with new corrosion-resistant fastenings and battens.
- Pointing to ridge cappings may dislodge or crumble. Cappings should be re-pointed, taking care to match existing mortar.
- Galvanised iron flashings in the roof valleys may rust and lead flashings may deteriorate or split. Patch where possible and replace only those sections that are damaged. It will be necessary to remove adjacent tiles when repairing the flashing.
- Tiles can crack, break or decay. Damaged tiles should be replaced, matching the original exactly. It may be possible to source good quality, salvaged tiles that match. Incorrectly-sized replacement tiles can cause surrounding tiles to lift and the roof to be no longer watertight.
- Terracotta ridging, finials and decorative gargoyles are important details and should be retained. If these are damaged beyond patching, replacements may be sourced second-hand. It may be possible to reconstruct from photographic evidence, and matching reproductions may be available.

Tiled roof renewal

The life of the tiled roof should be prolonged as long as possible with regular maintenance. The most likely reason for renewing a tiled roof may be extensive mechanical damage caused by hail or other extreme weather events.

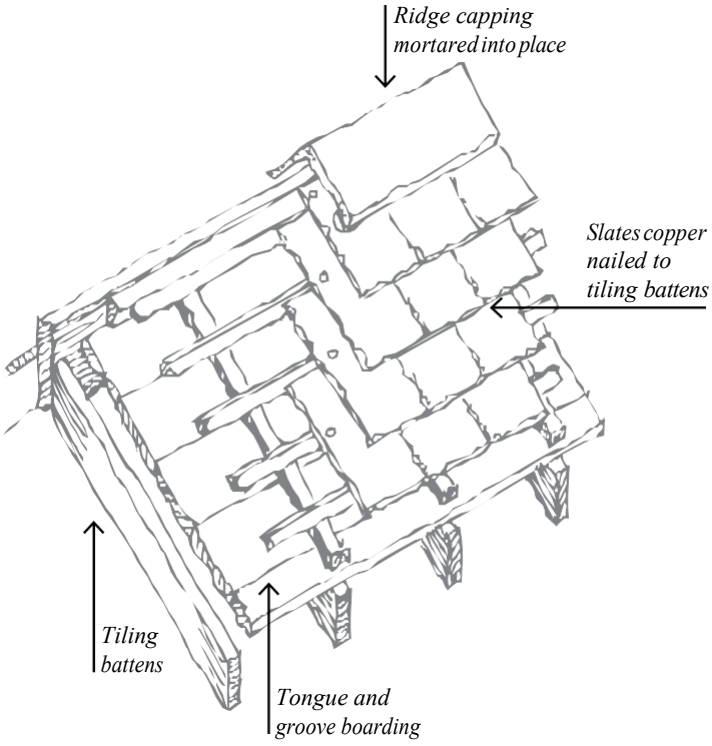
- Marseille tiles are still manufactured, as are other patterns. However, colour, size and pattern may not be an exact match and salvaged tiles are preferable. If unable to source matching tiles, it may be possible to cover the important visible planes of the roof with tiles from the rear of the building, replacing those at the rear with new tiles.
- Tiles are secured to the roof at intervals by nails or wire to prevent wind movement. Replacement wire should be copper.

Slate roofing

Slate has been used in Australia since the 1830s and was popular as a roofing material in the nineteenth and early twentieth centuries. Slates were usually imported from England and Wales, their colour ranging from blue through to grey, depending upon the quarry.

Slate is a durable and long-life roofing material, unlike other claddings such as iron or steel, which can be subject to corrosion. The slate's source determines its colour and its degree of durability. Decorative patterns can be produced using slates of different colours and shapes.

Slate tiles were fixed to timber roof battens with copper nails or clouts. The battens were usually laid over tongue and groove boarding. Ridging was made from lead (rolled and dressed over a timber dowel), galvanised iron, cast iron and, after about 1885, terracotta.



Typical slate roof structure

Prolonging the life of a slate roof

Regular and consistent maintenance is the most effective way of extending the life of the roof of a building and helps conserve significant fabric. Avoid walking on slate tiled roofs. Where access is required over a slate roof by maintenance personnel, they should use a 'cat ladder' hooked over the ridge.

Inspect the roof regularly and look for any slates that appear to have slipped or are slipping. If the bottom edges of the slates are uneven across the roof, the slate could be slipping from the battens due to breakage or faulty nails. Look for noticeable cracks or breaks. Inspect flashings and valley gutters for deterioration and keep them free of debris that may trap water.

Repairing a slate roof

Inspecting the roof will have revealed defective, damaged or slipped slates and any problems with flashings and gutters.

The ability to lay and repair slate properly requires training, practice and the right tools. Only a roof slater with experience in conservation work should be entrusted with repairs on the slate roof of a heritage-listed building.

- Determine the source of the leak. The cause may be due to a sagging roof structure or, more often, a faulty gutter, valley or flashing rather than the slates. The water's exit point may be some distance from the actual leak.
- Failure of a slate roof is caused most often by corrosion of the nail fixing or a breakdown of the slate around the nailing holes. This will cause slippage as the corroded nail no longer fixes the slate securely to the timber battens. Where the slates are sound, the existing slates should be re-nailed.
- The pointing to ridge cappings may have become dislodged or have weathered away. Cappings should be re-pointed with mortar that matches the existing mortar.
- Metal flashings may have corroded or become dislodged. Patch where possible and replace only those sections that are damaged. It may be necessary to re-point brick or stonework around the flashings.
- Slate can crack, break or delaminate; it is particularly vulnerable to breakage as a result of foot traffic and hail. Damaged slate should be replaced with matching slates. It may be possible to source good quality, salvaged slates that match. Incorrectly-sized replacement slates can cause surrounding slates to lift and the roof to no longer be watertight.

Slate roof renewal

The life of the slate roof should be prolonged as long as possible through regular maintenance. Where the slate fixings have deteriorated, stripping and refixing the roofing will be necessary.

- When slate renewal becomes necessary it is an opportune time for the roof structure to be inspected and necessary repairs carried out.
- The old slates should be carefully removed, ensuring that those in good condition are stacked vertically for re-use, preferably on the roof, to minimise breakages in handling. Lead flashings should be carefully retained for re-use.
- Slates were commonly laid on tongue and groove timber boarding. This acted as a secondary defence against leaks and cross-bracing for the roof.
- Slate is a durable material and most slates stripped from a roof are likely to be reusable. It is however common for at least 10% of the slates to require replacement. To maintain the appearance of the roof, the salvaged roof slates should be used on the most visible roof slopes, with the new slates confined as far as possible to the less visible slopes.
- Well-built slate roofs often had mitred hips with lead flashing in place of a capping. If not, mitred hips were capped with terracotta tiles bedded in mortar or with metal rolls. Ridge cappings were formed with a metal roll (usually lead) or a terracotta tile bedded in mortar. These details must be repeated when the roof is renewed.
- Imported Welsh slate is most commonly found on historic buildings. Welsh slate is still being produced and is available in a range of sizes and thicknesses. Canadian and Spanish slates are also available, but the colours are less likely to match the original. As with most natural stone, performance of slate, even if sourced from the same quarry, may vary over time and test data should be checked before making a final selection.

Shingle roofs

Discussion regarding timber shingle roofs begins with distinguishing between shingles and shakes. Shingles are timber roofing units with a sawn finish, roughly 450mm long by widths of 75 to 175mm and 13mm thick. Shakes are units of similar dimensions but are split from the log, are thicker, and have a rougher appearance. Early Queensland buildings are most likely to have been roofed with shakes.

The life of a shingle/shake roof is limited and, although their use was widespread until the late 1800s, few have survived to the present day. The practice of covering a leaking shingle roof with corrugated galvanised steel has preserved a number of shingle roofs, often without any indication of their presence.

Shingle/shake renewal

Should it be desired to renew a roof covering with the original finish it should be established if shingles or shakes were the original roof covering. Remnants of the original roof or early photographs will provide evidence.

Western red cedar is a commonly marketed and available shingle, it has a different colour and texture to the Queensland hardwoods and is not an appropriate material for use on a heritage-listed building. It has a life expectancy of no more than 15 years. Local hardwoods such as Forest Oak (casuarina torulosa), Ironbark (eucalyptus fibrosa) and Red Mahogany (eucalyptus resinfera) have a life expectancy in excess of 50 years and are available as shingles and shakes.

The Australian hardwoods are generally available as green timber and must therefore be butted together when laid to allow for shrinkage. This leaves an acceptable gap of about 10mm between them. Shingles and shakes are nailed to 50mm x 38mm battens forming a triple overlap in the same manner as roofing slates. Each shingle is twice nailed, 20mm to 25mm from the edge and 40mm to 50mm above the butt line of the next course.

Hip, ridge and valley details

Hips and ridges must be capped. This is traditionally done with a site made assembly of shingles and shakes. Galvanised steel or lead sheet were also used to form capping.

Valley gutters are formed from galvanised steel sheet and should extend at least 200mm from the centreline under the shingles or shakes.

Maintenance and repair

As with other roofs, regular and consistent maintenance is the most effective way of extending the life of a shingle or shake roof and helps conserve significant fabric. Avoid walking on these roofs—where access is required, make use of a 'cat ladder' to spread the load.

- Inspect the roof regularly and look for any shingles or shakes that appear to be loose or split. Drill a hole for a new nail to prevent splitting. Splits and holes can be fixed with a piece of galvanised sheet slid under the shingle and nailed in place through the shingle.
- Badly split, missing shingles or shakes should be replaced. Loosen the shingle or shake above, remove the shingle, cut off the nails and slide the new shingle into place and fix with galvanised nails.

Technical Note

4. ROOF DRAINAGE

Purpose

This section deals with the means by which rainwater is directed via gutters and downpipes to the ground and away from the building. This note identifies the types of guttering present on heritage-listed buildings in Queensland, common causes of their failure and appropriate measures to maintain and repair them. A fault in the roof drainage system can cause damage to the fabric of the building as the rainwater is concentrated in a small area.

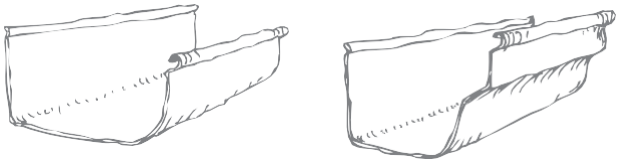
Context

The gutters and downpipes of most heritage-listed buildings are formed from galvanised iron and are often an important architectural feature. The corners of Victorian and Federation buildings were often emphasised by decorative sheet-iron acroteria on the Ogee gutters. The ogee profile itself came about as an imitation of earlier timber gutters, which were moulded to match the barge boards of gable ends. Ornate rainwater heads and downpipes with elaborate saddle straps also formed part of the decorative scheme.

The typical Queenslander house later in the 20th Century had plain Quadrant (quad) guttering. Although plain, the line of the quad gutter remained a strong architectural feature of the roof.

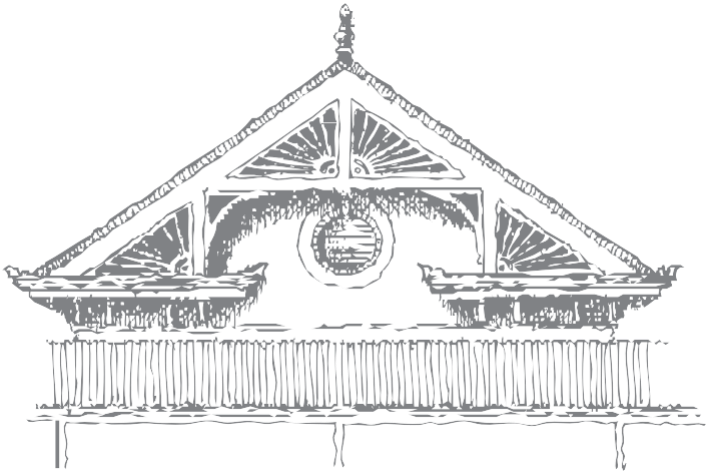
Commercial and public buildings with formal street frontages usually hid their pitched roofs behind an ornate parapet wall. This created a need for box gutters located at the junction between roof and parapet wall or between parallel roofs. Inter-war, modernist buildings seeking to achieve clean horizontal lines, without resorting to a flat roof, also hid a pitched roof behind a parapet wall. This was often only done on the main elevations, with other elevations continuing to use the quad gutter.

Commercial and industrial buildings covering a large area were usually roofed by a complex series of parallel roofs requiring box gutters between them, and which often required internal downpipes.



'Quad' gutter *'Ogee' gutter*

Common Queensland gutter profiles

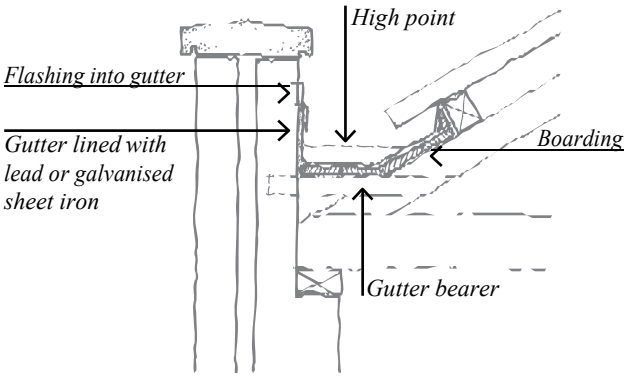


Decorative use of guttering—Victorian

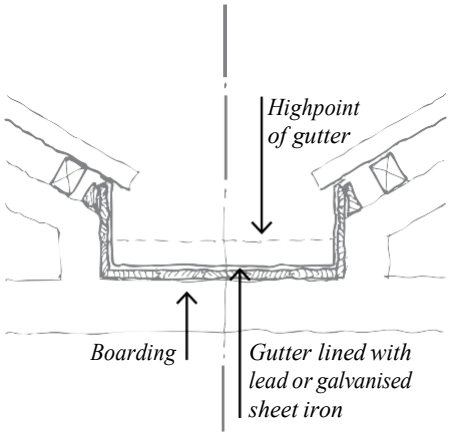
The Ogee gutter is returned around the gable and corners are emphasised with acroteria

Decorative use of guttering—1930s

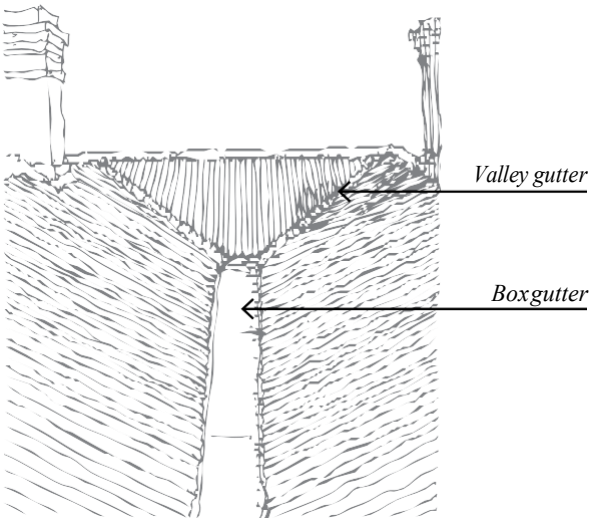
A plain building with a quad gutter taken all around the building, in front of the gable and following the pitch of the roof.



Section through box gutter at parapet wall



Sections through box gutter between parallel roofs

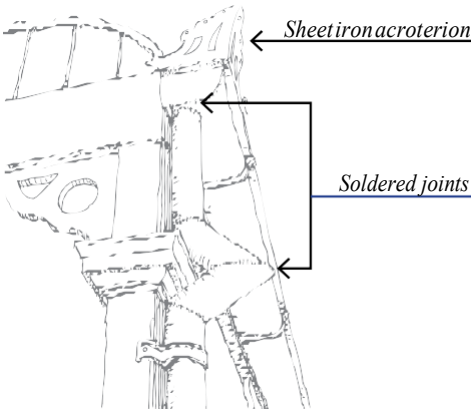


Typical box gutter between parallel roofs

Materials, profiles and size

As already noted, the majority of gutters and downpipes on heritage-listed buildings are of galvanised steel. Copper, asbestos and lead are also found. Copper gutters and downpipes are less common and are mainly found on public buildings. Asbestos gutters were widely available, but are not always found on buildings with asbestos roofs as they were comparatively brittle. Lead was used to line box gutters, but galvanised steel sheet is more common.

- When replacing gutters and downpipes, the original profiles and shapes should be reinstated. Evidence from early photographs or original specifications or from remnants such as brackets should enable the correct profile to be determined. The ogee and quad gutters are the most commonly found profiles on heritage-listed buildings. They are still popular and, while mainly produced in Zincalume® and COLORBOND®, are available in galvanised steel.
- Gutters and downpipes of some roof drainage systems on heritage-listed buildings are too small to carry the volume of water commonly shed in heavy rain. The judicious insertion of additional downpipes and rainwater heads can improve the capacity of the system, but their design and siting must be carefully considered. Modern ogee guttering is slightly wider than the traditional profile, allowing greater carrying capacity. Its use may be acceptable in some cases, usually where replacement guttering is required.
- Downpipes were usually round, and formed from galvanised iron sheet, but rectangular ones were not uncommon. Any new downpipe should be located to minimise visual disruption of the façade, while providing a good spread of outlets around the roof. The profile should match the original with some way of distinguishing between the new and the old on close inspection. If anything, simplify the roof drainage system; do not make it more complex.



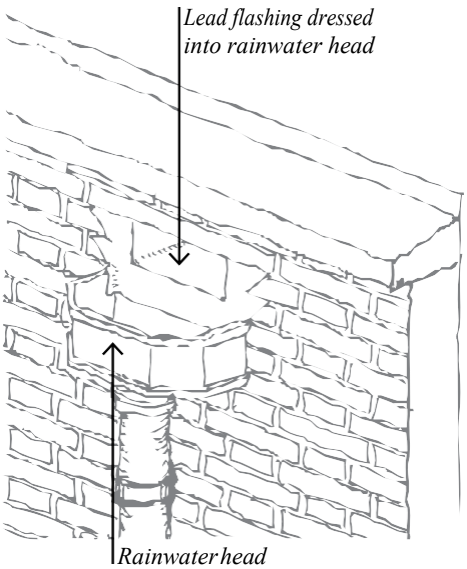
Gutter and down pipe replacement

Here the replacements are in galvanised steel, the gutter and downpipe of the appropriate profiles with soldered joints. However the kink in the downpipe to avoid the post moulding is likely to cause blockages.

Maintenance

Gutters are particularly susceptible to corrosion due to the build-up of leaves, bird droppings and air pollutants. The resulting weak organic acids and salts promote corrosion in an environment already at risk due to water lying for long periods in shallow, slow-draining guttering. The regular cleaning of gutters and stormwater disposal systems is an essential maintenance strategy.

- Occasional checking to ensure that gutters fall the right way is also important. The slope of a gutter may change with time due to distortion of the roof framing and to settlement or ground heave beneath parts of the building. The resulting build-up of water and debris may weaken gutter supports, causing further sagging. Old gutters may require support by over-strapping to enable the fall to be maintained.
- Valley gutters are located at the junction between sloping roofs and, as with box gutters, they carry concentrations of rain water run-off and are susceptible to blockage by leaf matter and other debris. They are often not clearly visible from the ground and should be checked regularly. Similarly, flashings at the back of chimneys and other vertical elements protruding through sloping roofs can concentrate rain water run-off and must be kept clear.
- Box gutters are the weak link in the drainage system of the roof as they are out of sight and are often neglected. If they leak or overflow, a large volume of water may be discharged into the building. Box gutters and valley gutters are particularly vulnerable to blockages caused by accumulations of leaves and other obstructions such as dead birds or rodents. A build-up of hail can also create a short-term blockage. Strategically placed leaf guards may prevent this.
- Box gutters usually discharge into a rainwater head. These are essentially boxes on top of the downpipe that provide a large catchment area to slow and dissipate the energy of the horizontally moving water from the gutter. The mass of water in the head then drives the water down the pipe more efficiently .The rain water head must be kept clear and should always have an overflow outlet. Rainwater heads make attractive nesting places for birds and should be regularly inspected.



Rain water head at parapet wall

- Rainwater is naturally slightly acidic. When affected by certain atmospheric conditions, such as industrial pollution or proximity to the coast, rainwater can become more acidic. The effect of this acidity is neutralised to some extent if the rain water falls on zinc-coated materials or unglazed cement tiles by the chemical reaction with these materials. If the rain falls on a neutral surface, such as a painted roof of any material, Zincalume® or glazed terracotta tiles, and is then concentrated onto localised areas of galvanised iron (as with the gutter below a corrugated roofing sheet), the acid effect will accelerate corrosion at points below each corrugation. If left unchecked, the gutter will quickly rust through.
- The rainwater collected from the roof must be directed away from the building. The base of the downpipe must discharge into an underground disposal system, usually through a gully trap or into a surface drain. If allowed to soak into the ground at the base of the building, rainwater may undermine the building's footings and exacerbate rising damp problems. Discharge outlets of downpipes should be checked for blockages when it is raining.

Repair of gutters and downpipes

Principles to follow when repairing guttering and downpipes on a heritage-listed building:

- If there have never been eaves or gutters on the place do not add them without good reason and careful design.
- As far as possible, prolong the life of the existing gutters through patching, treating rusting areas and painting the internal surfaces of the gutter.
- Replace only those parts that are damaged or missing. Replace like with like—gutter and downpipe profiles should match the original unless they are unobtainable or the sizes are clearly inadequate, in which case the replacements must be carefully selected and appropriate to the building.
- Gutter brackets should have the correct profile. Re-use existing brackets wherever possible.
- Gutter brackets should be carefully fixed to the fascia and should not pierce through the back-face of the timber.
- It is important that gutters slope towards the outlets (a minimum gutter fall of 1 in 500 is recommended). Without this slope, ponding will occur and reduce the life of the gutter.
- Gutters generally fail at the joints. Remove the rusted areas and re-solder joins. Joints in new guttering and downpipes should be soldered.
- Small leaks may be repaired with silicon, but makeshift repairs are unlikely to last.
- Downpipe locations should be as originally intended. If downpipes are missing, the original discharge locations will be apparent in the gutters. If necessary, insert additional downpipes and ensure they are carefully designed and sited.
- Downpipe fixings (either straps or spiked hooks) should match the existing fixings and should be painted to match the adjacent paint surfaces.
- PVC replacements or COLORBOND® modern profile gutters and downpipes should not be used as their appearance will be out of character with the building.
- Rainwater heads should be carefully patched if damaged.

Technical Note

5. ROOF STRUCTURES

Purpose

This section looks at the broad range and function of roof structures to be found on heritage-listed buildings. It examines the defects that occur in these structures and suggests methods of repair. Defects are usually the result of a failure in some other element of the building, such as waterproofing, guttering and structural movements. Mechanical damage may be the result of extreme weather or termite attack.

Context

The roofs of heritage-listed buildings are often the least altered part of the building and may provide clues to its history. They are also the least visited part of the building and, as a consequence, are liable to suffer from lack of maintenance. The function of the roof structure is to support the weather-proof covering and provide the slope that allows rain water to be carried away from the building. Apart from sheltering the occupants and contents of the place, the covering protects the roof structure from decay.

The roof structure must be adequately braced and anchored to not only support the roofing covering materials but also resist lateral and uplift wind forces, and to brace the building as a whole.

There is a long tradition of using timber for roof-supporting structures. Most old buildings have comparatively steeply pitched triangulated roofs with varying degrees of elaboration and complexity. Sometimes, they include features such as ornamental towers, pinnacles, gables and parapets. Roofs of domestic buildings are almost invariably of timber construction, while industrial buildings with their larger spans are usually of steel construction.

Some 'modern' domestic and commercial buildings feature flat or near-flat roofs where designers wished to achieve clean, horizontal lines. These roofs are usually made from reinforced concrete, waterproofed with mastic asphalt or roofing felt.

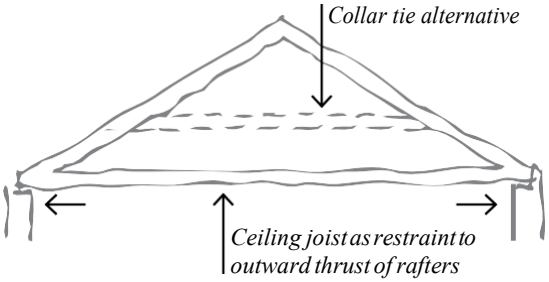
Roof form and framing

Timber roofs

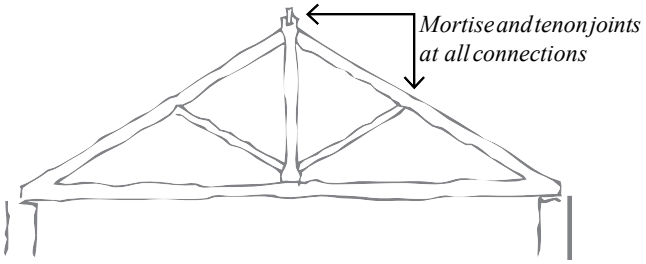
The simplest form of roof structure is the mono-pitch lean-to (or skillion) roof. Rafters, at a pitch appropriate to the covering material, are supported on walls or posts. A verandah is usually a lean-to, supported by a wall plate attached to the wall of the building, and the lower end by verandah posts.

Some small, early buildings have triangulated pitched timber roofs simply supported on the walls, which must then resist the outward thrust of the rafters. The span of these roofs may be increased by supporting the rafter on a purlin. The outward thrust of the rafters may be restrained by a ceiling joist, tie or collar tie, forming a roof frame or truss. A roof truss is a triangulated frame that transfers the load of the roof via the wall plate onto the external walls. The triangle is the strongest form of framed structure as it cannot be deformed if the members are adequate and the joints are rigid.

The detail of the roof structure is determined by the weight of the roof covering, the weight of the roof structure itself, and the span between the supporting walls. Roof coverings of terracotta tiles, slate or asbestos cement sheets are much heavier than corrugated steel sheet and require far more robust framing. Slate roofs usually had a boarded sarking fixed to the rafters, which added to the weight of the supporting structure.



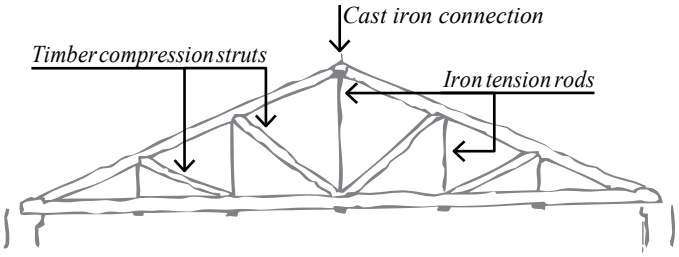
Simple timber roof truss



King post timber roof truss

Timber and iron roofs

The various members of a roof truss are exposed primarily to compressive or tensile stresses. Timber performs well under compression, while the tensile strength of iron is much greater than that of timber. Replacing the tie beam of the truss with an iron rod, and in combination with cast iron connections, it was possible to construct an efficient truss on site without complicated carpentry.



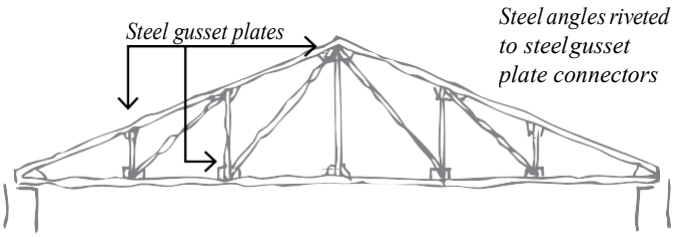
Timber and iron roof truss

Iron and steel roofs

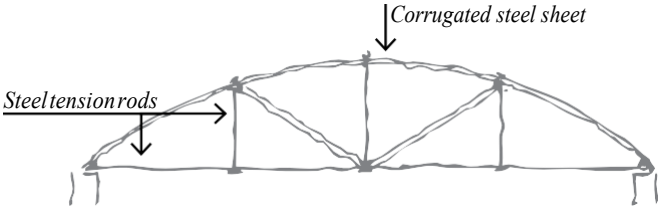
The availability of wrought iron, and later steel, during the last half of the 19th century, made it possible to make roof trusses that achieved the greater spans required by railway and industrial buildings. These generally followed the triangular form of the timber truss. The need for natural lighting in industrial buildings saw the development of the saw-tooth roof, formed from a rectangular truss spanning between walls or columns with mono-pitched frames spanning between the trusses.

Roofs of an arched configuration, and using a corrugated steel covering, usually have a triangulated-frame supporting structure. Some roofs, however, make use of the arched form of the corrugated steel to span the distance between the supporting walls with minimal supporting structure.

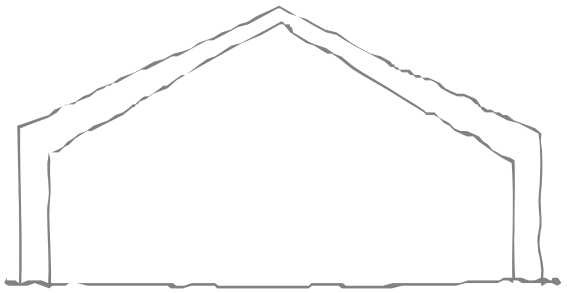
Portal frames are a comparatively recent form of construction where rafters and columns form part of the same frame. The rigid connection between rafter and column transfers some of the bending moments of the rafter to the column, allowing a larger span to be achieved. Portals are generally steel, precast concrete or laminated timber. The buildings are usually single bay and single storey.



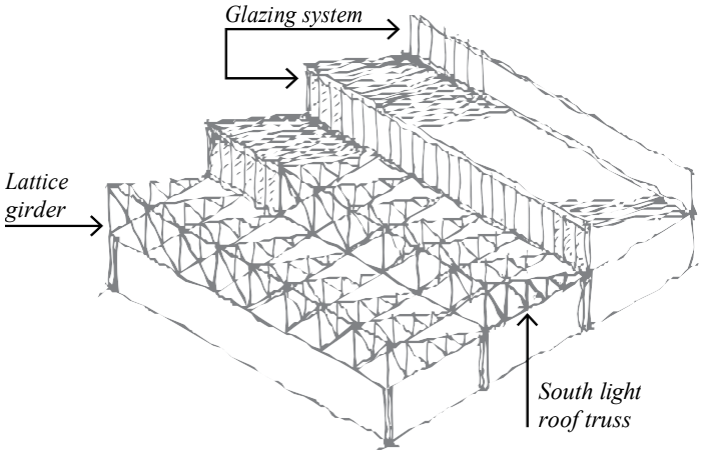
Steel roof truss made of paired angle iron members



Arched corrugated steel sheet as structural member



Typical portal frame—material could be timber (laminated or ply), steel or concrete



Saw-tooth (south light) roof system

Lattice girders supported on columns carry south light trusses which support the roof covering.

Flat roofs

Flat roofs are uncommon in older heritage-listed buildings in Queensland and may occur as links between pitched roofs which function effectively as box gutters. They are formed from timber joists with a tongued and grooved board cover and set at an incline to the rainwater outlet. Waterproofing with lead sheeting was the most appropriate material, given its durability. Various forms of bituminous felt were a cheaper alternative, but had a comparatively short life span. A number of waterproofing membranes have become available over the years and may be found where repairs have been carried out.

Flat, reinforced concrete roofs are found on some mid-20th century heritage-listed buildings. Waterproofing was always a problem for these roofs. Well-laid and protected mastic asphalt could be expected to have a reasonable life-span, but the bituminous felts and similar systems broke down quickly in Queensland's climate. Most waterproofing membranes will have been replaced several times and it is not uncommon to find a low-pitched corrugated steel roof added over a persistently leaking concrete roof. Present-day waterproofing membrane systems are more reliable and generally do not present conservation problems.

During the 1960s, several new steel roofing sheet profiles were introduced. These were roll-formed from coil strip, enabling continuous sheets of up to 12m lengths to be produced. An innovative product called Klip-Lok® 'Sixteen' had three ribs, 41mm deep. When fixed, the side ribs of adjacent sheets interlocked and did not require additional fastening. Klip-Lok® was especially suitable for near-flat roofs, which usually are simply supported on beams or rafters.

Joints and fastenings

Timber roofs

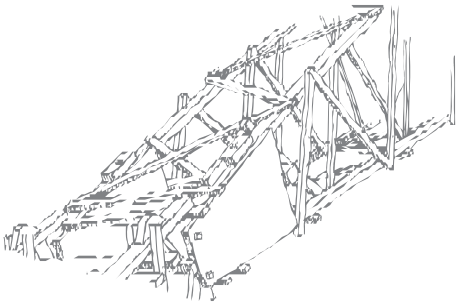
For roof frames to function, the joints needed to be rigid and this was achieved in traditional timber construction using mortise and tenon joints secured with hardwood wedges. Early settler buildings relied on a combination of wrought iron nails and bolts to achieve rigid joints.

Roof framing for large or complex buildings was usually prepared in the workshop where complex mortise and tenon joints could be accurately machined. The trusses were assembled on site and the joints and connections secured with steel bolts and straps.

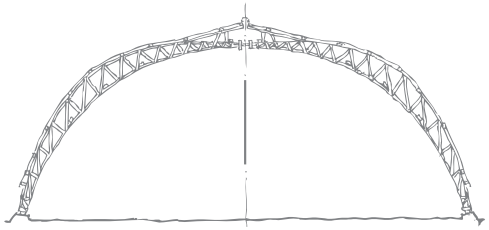
Roofs combining timber and iron relied on patented cast or wrought iron connections to tension the tie rods and king bolts. These roof trusses could not support a ceiling and were best suited to industrial uses.

Built-up roof trusses were formed on-site and made of much lighter paired timbers bolted together at the joints. In the ordinary bolted connection the stress was concentrated at the outer surfaces at the interface. Using timber connectors distributed the stress over a wider area and transmitted the load more effectively. The two types of connector most commonly used were the toothed plate and split ring.

During World War Two, shortages of steel and the need for large span structures saw the innovative construction of wide span arched trusses made up of short lengths of hardwood nailed together in jigs on-site. The increased demand for speedy construction at the time meant traditional timber roof construction was replaced by increased use of glued and nailed plywood gussets or simply nailed joints to form trusses. Post-war, the trends continued and the nail plate connector was introduced in 1952. Combined with rolling press fabrication, it has made it possible to produce engineered trusses with a minimum of material.

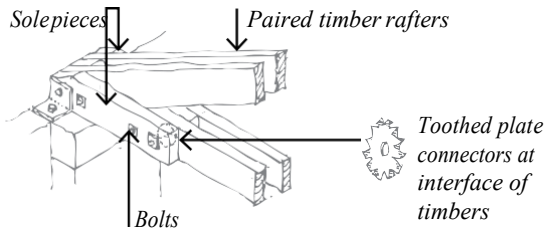


Archerfield Igloo—detail of boxed truss at base. Boxed truss made up of light hardwood timbers nailed together. Span of 57.45m.

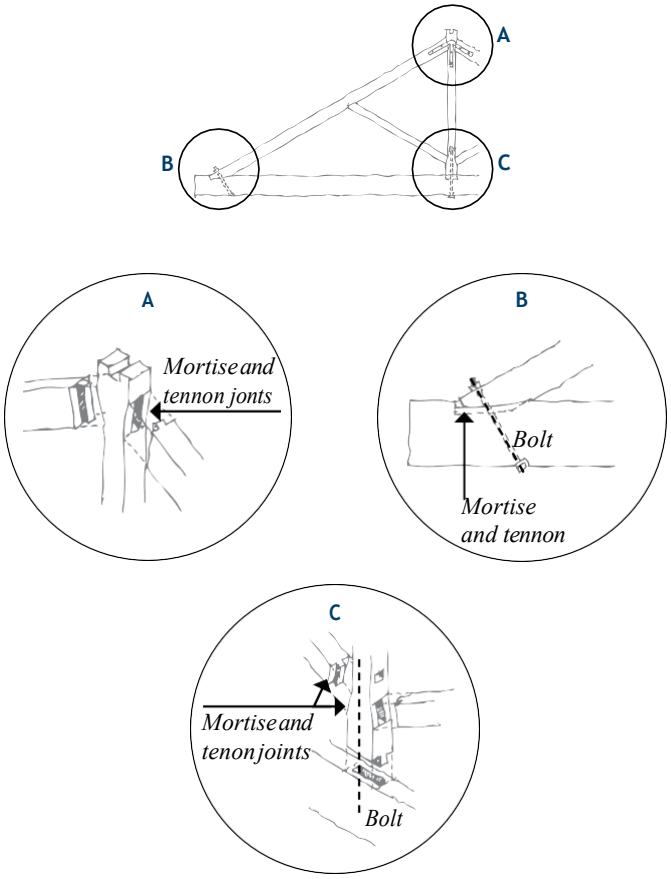


Rocky Creek Igloo—cross section. Paired trusses made up from light hardwood timbers nailed together. Span of 16.9m.

WWII timber roof truss construction



Built-up timber roof truss connections

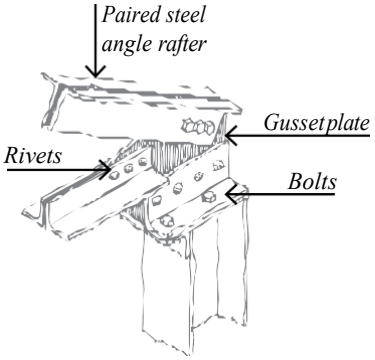


Timber, king post roof truss connections

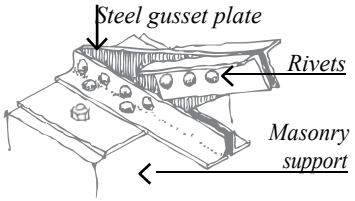
Iron and steel roofs

Iron and steel trusses were usually made up in segments from steel angles. The members of the truss are joined together by means of rivets or bolts and thin plates called gussets. Small trusses could be fabricated in the workshop, but larger trusses were fabricated in parts and bolted together on site.

Welding of steel in construction became widespread in Australia during the 1930s, effectively replacing riveted connections and simplifying roof truss fabrication. Welding is best done in the workshop—trusses were still fabricated in parts in the workshop and bolted together on-site.



Steel column support



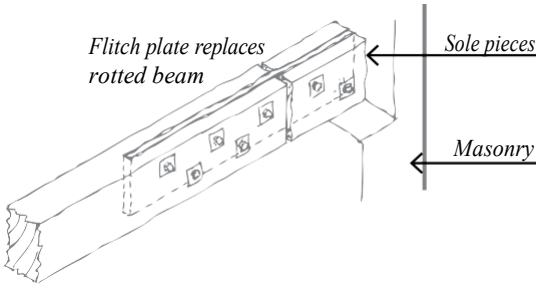
Steel roof truss connections

Common defects in roof structures

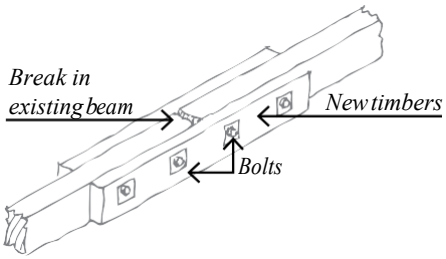
The timber framing of most heritage-listed buildings is usually robust, with a wide safety margin. Similarly, iron and steel roof structures, although wide spanning, generally only have a light roof cladding and, with wind bracing, are sufficiently robust. Defects in both types of roof structure usually result from inadequate maintenance and neglect or damage resulting from extreme weather events.

Timber roof structures

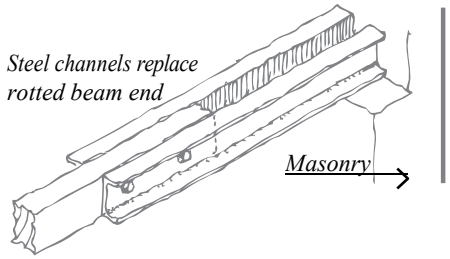
- Over a long period, roof leaks cause localised portions of timber roof structures to rot. This usually affects beam or rafter ends where water runs down the rafter, creating a damp condition at the junction between wall plate, ceiling joist and rafter. If unchecked this can cause the rafter to become detached and put lateral pressure on the wall top.
- Leaking, blocked and overflowing box, parapet and valley gutters have the same affect, where regular cycles of wetting and drying lead to timber decay. Damp masonry will encourage rot in beam ends set into masonry walls.



Steel flitch plate



Timber bolted fishplate



Steel channel bolted fishplate

- Damp conditions in walls will encourage termite infestation. Damage caused by these insects can spread rapidly throughout the roof space if undetected and can have serious structural consequences due to the loss of cross-sectional area of the timbers.
- Decay resulting from damp conditions and insect attack will most often occur at the eaves of the roof and will affect the junction between wall plate and roof truss. If the decay is severe, the joint will no longer function and the outward pressure of the rafter will bear down on the wall.
- Large timber beams may, over time and as a result of changes in moisture content, develop longitudinal cracks that can affect their structural adequacy.
- Roof trusses may be affected by ill-judged alterations where struts or ties have been removed to make way for alterations within the roof space—for example, to install a water tank or insert a room and dormer windows. Unless there has been appropriate reinforcement, unequal loadings may cause the structure to distort.
- Mechanical damage may result from extreme weather or other events such as structural subsidence or falling trees. Damage should be assessed by an engineer.

Steel roof structures

- Iron and steel structures are also affected by damp conditions. Corrosion occurs where areas of the metal are in contact with water of a different oxygen concentration, thus acting as an electrode and causing areas of rust to form. As long as water is present, the process continues. If the air is contaminated, usually with sulphates and chlorides, which is common in industrial situations, the corrosion rate increases.
- Galvanic corrosion occurs where dissimilar metals are in contact in a damp environment. In the case of steel structures, it is most likely to occur where unprotected stainless steel has been used for repair work.
- Steel roof structures, particularly those of the early 20th century, often rely on back-to-back angles riveted together through gusset plates. This creates locations that cannot drain. In a heavily polluted atmosphere, such as in railway sheds, small amounts of water over a long period can cause severe corrosion.
- Mechanical damage may result from extreme weather or other events such as structural subsidence or falling trees. Damage should be assessed by an engineer.

Repairs and alterations to roof structures

Damage to the roof structure is generally limited to specific areas or structural members. Repairs to timber members should be limited to replacing or reinforcing the decayed or damaged material. In carrying out repair work, ensure that the original cause of decay or damage is eliminated.

Replacing roof sheeting may not require repairs to the roof structure. However, if the sheeting is fixed to current code requirements, the tie-downs of the roof structure should be examined by an engineer to determine if they are adequate. While previously roof sheets might be blown away in severe weather, if the roof sheeting has been securely fixed, and the structure itself is not adequately tied down, there is a risk that the entire roof may be carried away.

Generally, assessing condition and specifying repairs should be carried out by a structural engineer.

Timber roof structures

- Cut away decayed or damaged areas of timber and replace with matching timber of similar moisture content. Ensure that all timber affected by fungal decay is removed back to sound timber. The new timber should be scarf-jointed to the existing timber and secured with stainless steel bolts or screws.
- In some instances it may be acceptable to replace the decayed or damaged timber with a steel end-piece or flitch plate.
- The decayed timber may, in some instances, be repaired with resin. This would require reinforcing bars set into the sound timber. Entire joints should not be formed in this way.
- Longitudinal cracks in timbers may be filled with resin. Ensure that the entire void is filled with resin.
- An alternative to replacing the decayed or damaged timber is to leave the original fabric in place and introduce new material to carry the load. This may consist of new timbers or steel plates or angles bolted to the existing timbers. This will not be appropriate where fungal decay has occurred.

Steel roof structures

- In assessing the degree to which steelwork has decayed by corrosion, remember that rust occupies six to 10 times the volume of the original material and decay may not be as severe as it appears. Assuming that the steelwork has survived for 50 to 100 years, and is not likely to be subjected to a worse environment, removing the rust by wire brushing down to bright metal, in preparation for zinc-rich priming and several coats of an air-excluding and water-excluding paint, should be adequate.
- Where steelwork is liable to suffer continued corrosion in an aggressive environment, it will be necessary to clean it back to bright metal, usually done by grit blasting. It must then be given a zinc-rich primer followed by several coats of air- and water-excluding paint. Thorough cleaning down may require the structure to be dismantled. This poses further problems with riveted joints, as dismantling would require drilling out the rivets, which may not be an acceptable heritage outcome.
- Repairing badly corroded steelwork may be comparatively straightforward if welded reinforcement is considered to be acceptable. As a process it is non-reversible and reduces the integrity of the original fabric. Additional structural support, such as new beams and columns, could be an alternative where this is visually acceptable.

Technical Note

6. ROOF INSTALLATIONS

Purpose

This section is designed to assist owners and managers of heritage-listed buildings when fitting new technologies and services on the roof of their building. The best way to preserve a heritage-listed building is to ensure its continued use and introducing these technologies may help secure a future for the place. While the roof may be a logical location for them, any installation must not diminish the place's heritage significance.

Context

Installations vary in form and function and may be grouped under the following headings:

- **Energy:** The desire to introduce environmentally sustainable practices, combined with financial incentives, has encouraged installation of devices to generate electricity and hot water using solar radiation. Wind power is also an option for generating electricity.
- **Communications:** Various television, radio and telecommunication devices have become part of everyday life and must therefore be considered when adapting a heritage-listed building to a new use. The devices all require antennae that generally function best at higher elevations. The technology is constantly changing, requiring regular replacement of equipment.
- **Services:** Extracting fumes from food preparation and other processing areas requires plant and ducting, with the final vent as high as possible on the building. Large spaces within buildings are required to be protected by smoke exhaust systems located on the roof. Air conditioning condenser units are often located on rooftops.
- **Safety:** The need to maintain the roof of a heritage listed building in good order requires that regular inspections and, where necessary, repairs be carried out. For uncomplicated low structures, this may not be an issue, but high buildings with complex roofs may require installations to facilitate safe access. Further, installing the devices referred to above requires the need for safe access for both installation and servicing.

Guiding principles

Installations on the roof of a heritage-listed building should have as little impact as possible upon the heritage significance of the place. Since they are likely to require regular updating, they should also be fully reversible.

Further considerations common to all installations:

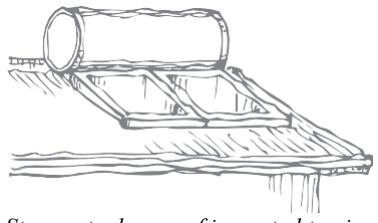
- Make sure that the significance of the place, both in terms of its fabric and its setting, are not negatively impacted by the proposal.
- To ensure minimal impact on the values of the place, all alternatives that have less impact on the values of the place must be explored before a particular course of action is finalised.
- Installations should not be located on the principal elevations of the building and as far as possible should not be visible to the public.
- The scale, form, colour and reflectivity of the installation should not detract from the significance of the place.
- The installation should not require alterations to significant fabric.
- Mounting brackets, cabling and wiring must not damage significant fabric. Ensure that metals used are compatible with the roof covering.
- Ensure that the existing structure is capable of supporting the load.
- Ensure that the watertightness of the roof is not affected and that the installation does not encourage the build-up of leaf matter and debris.
- Ensure that maintenance traffic will not damage significant fabric.

Photovoltaic panels

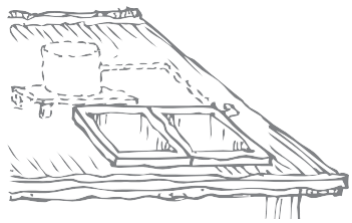
- Consider alternative locations on the ground or on non-historic buildings.
- Find an orientation of the heritage-listed building compatible with that required by the panels. The ideal orientation for the panels may be unacceptable to the appearance of the place e.g. brackets to achieve a north orientation may be unsightly.
- Choose panels with a low profile and install them as close to the surface of the roof covering as practical.
- Ensure the roof covering is sufficiently robust to support the panels.
- Set panels back from the edge of flat roofs.
- Avoid disjointed, multi roof installations.
- Colour panel supports and conduits to blend into their location.

Solar water heating panels

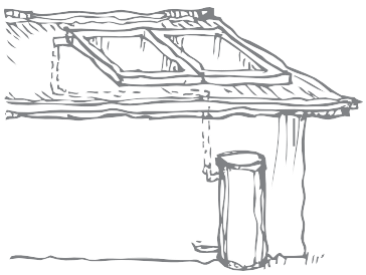
- Apply the same considerations as for photovoltaic panels .
- Systems that include the hot water storage tank may not be appropriate for the building because of their bulk and weight. The storage tank may need to be located on the ground or within the building.



Storage tank on roof is most obtrusive



Storage tank in the roof space is the least conspicuous—if there is space



Storage tank on the ground—less conspicuous than roof

Alternative locations for hot water storage from solar collectors

Wind turbines

- Wind turbines are commonly located away from buildings. While small turbines can be fixed to a building the performance of such a wind turbine will be reduced and the practice is not encouraged.
- Assess the structural load on the building to determine if it is capable of supporting a turbine.

Satellite dishes

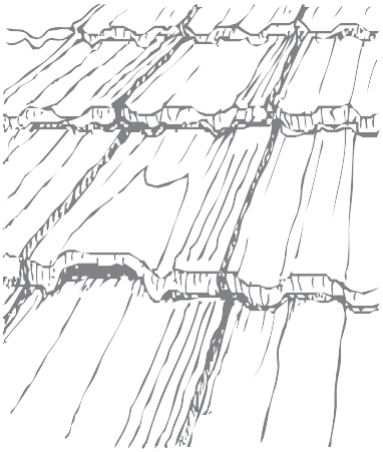
- Locate satellite dishes at the rear of the building where they are not visible from main frontages. Also consider their impact upon more distant views of the place and, where relevant, views from above.
- In situations of multiple ownerships or occupancy, require joint use of these devices wherever possible.
- Paint the devices to match the surrounding building.
- Use a dish with the smallest possible diameter.

Aerials, antennae

- As these installations vary considerably in size, height and complexity, assess their effect on the significance of the place accordingly.
- In situations of multiple ownerships or occupancy, require joint use of these devices wherever possible.
- Do not attach them to chimneys as the wind loading on these devices can be considerable, and take care locating the fixings for stays.

Services

- Kitchen exhaust ducting and vents can be very unsightly. Take care to design them to ensure they fit into the roofscape of the building.
- Where possible, make use of existing ventilators to vent roof spaces. Inconspicuous slimline ventilators are available that do not interrupt the roof line and are less intrusive than whirlybird ventilators.



Low profile roof vent in marseille tile

- Ensure that the metals and finishes of the installations are compatible with the roof covering.
- As air conditioning condenser units are bulky and heavy, consider locating them on the ground where possible.

Safety devices

- Make a detailed assessment of the heritage-listed building to determine what level of access to the roof is required to carry out maintenance and repairs to the fabric of the roof and to roof installations.
- Hazards relate primarily to the risk of falls from the roof. Provide protection in extreme cases by constructing walkways or, more usually, by installing fixings to which safety harnesses may be attached. Points of attachment must be capable of restraining and distributing the anticipated loads.
- Consider complementary safety measures appropriate to the place.

Basic fall arrest fixing

FURTHER READING

General

Walker M and Marquis-Kyle P, *The illustrated Burra Charter: good practices for heritage places*. Australia ICOMOS Inc, Burwood, 2004.

Metal roofs

Bell, Peter 1984, *Timber and Iron Houses in North Queensland Mining Settlements 1861 -1920*, University of Queensland Press, St Lucia, Qld.

BlueScope Lysaght website at www.lysaght.com provides information on all Lysaght products currently in production.

BlueScope Steel Limited website at www.bluescopesteel.com.au provides technical bulletins on a range of topics including:

- CTB – 3: *Corrosion – Zinc coatings on steel* 2003
- CTB – 12: *Corrosion – Dissimilar metals* 2003

Evans, Ian 1989, *Caring for Old Houses*, The Flannel Flower Press Pty Ltd, NSW.

Fielders website at www.fielders.com.au provides information on all Fielders products currently in production.

Lucas, C 1979, *Conservation and Restoration of Buildings: Conservation of roofs*, Australian Council of National Trust, Sydney, NSW.

Miles, J 1995, *Conserving the Queensland House* (brochure series, nos. 1-12) National Trust of Queensland, Brisbane.

Queensland Government Websites on Asbestos

These provide information on safe work practises and legal issues associated with asbestos.

'Asbestos', Queensland Government, www.deir.qld.gov.au/asbestos

'Asbestos in the Home', Queensland Health, www.health.qld.gov.au/asbestos

History of the introduction of asbestos

Lewis, M, 'Asbestos', in *Australian Building: A Cultural Investigation*, www.mileslewis.net/australian-building/pdf/07-cement-concrete/7.10-asbestos.pdf, accessed 2013.

'New Parramatta Industry', *Cumberland Argus and Fruitgrowers Advocate*, 4 August 1917.

James Hardie advertisement, *Sydney Morning Herald*, 2 June 1917, p9

Terracotta tile and slate roofing

Ashurst, J and Nicola, 1988, *Practical Building Conservation: Brick, terracotta and earth*, Gower Technical Press, Aldershot, UK.

Cedar Shake and Shingle Bureau, Mission, British Columbia, at www.cedarbueau.org provides information on new building with Western Red Cedar including:

- *New Roof Construction Manual*, September 2011

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Roof drainage

BlueScope Steel Limited at www.bluescopesteel.com.au provides technical bulletins on topics including:

- TB – 15: *Selection and use of steel gutter, downpipe and fascia products* 2011
- CTB – 3: *Corrosion – Zinc coatings on steel* 2003
- CTB – 12: *Corrosion – Dissimilar metals* 2003
- CTB – 25: *Inert catchment* 2008

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Roof structures

Beckmann, P and R Bowles 2011, *Structural Aspects of Building Conservation*, Spon Press, Abingdon, UK.

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- CTB – 12: *Corrosion – Dissimilar metals* 2003

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Stapleton, I 2008, *How to restore the old Aussie House*, Flannel Flower Press, Myocum, NSW

Roof installations

Australian Standards AS/NZS 1891.4:2009. Industrial fall arrest systems and devices. Selection use and maintenance.

English Heritage has the following publications at its website www.helm.org.uk

- Small-scale solar thermal energy and traditional buildings
- Energy conservation in traditional buildings
- Micro wind generation and traditional buildings

BlueScope Steel Limited website at www.bluescopesteel.com.au provides technical bulletins on topics including:

- TB-36: *Guide to good practice – Steel roofing and photovoltaic panels*. 2011

Safe Work Australia website at www.safeworkaustralia.gov.au has the following publications. Model Codes of Practice:

- Preventing Falls in Housing Construction. 2012
- Managing the Risks of Falls at Workplaces. 2012

Appendix G –Painting Maintenance Guidelines (DES Technical Note)

PAINTING—MAINTENANCE

This technical note discusses good painting maintenance practices and paint system compatibility. Common types of paint surface conditions and issues are identified and appropriate surface preparation methods that have been approved under General Exemption are outlined.

Background

Repainting is part of a preventative maintenance program. Ideally, repainting should be carried out before the failure of the paint system and the deterioration of the substrate. This is particularly important for timber substrates. Heavy chalking and the appearance of defects indicate that maintenance is required. Deciding to repaint should be based on paint wear and tear. Be aware that continual repainting of a sound paint system may lead to too thick a build-up of paint layers that obscure the detail of the building and is more likely to peel away from the substrate.

Why is it important to take care with surface preparation and painting?

Taking care with repairs:

- protects valuable historic information and significant paint finishes
- ensures paint finishes are properly conserved
- ensures paint removal methods do not harm significant heritage fabric.

Painting and surface preparation under General Exemption

Under General Exemption, painting work using an existing or a previously approved colour scheme can be carried out at any time, provided that the substrate is protected and preserved and the historic paint layers are retained. To achieve these objectives, a compatible paint system needs to be chosen and the gentlest method of surface preparation selected.

Under General Exemption, the objectives of repainting are the continued protection and conservation of the substrate and the retention of historic paint layers. . Therefore the gentlest method of surface preparation must be selected.

The following surface preparation methods are approved:

- cleaning, hand-scraping and hand-sanding
- mechanical sanding by orbital sander when used as a smoothing/finishing tool (its small diameter and circular motion are useful for feathering areas that have been scraped, however it must not be used for removing multiple layers of paint).

Disturbance or removal of earlier paint layers—other than small areas that have failed by chalking, flaking, peeling or blistering—is not approved under General Exemption.

Compatible paint systems

Successful repainting is dependent upon the compatibility of the new paint with the existing paint. Under General Exemption, repainting should be carried out using the same paint system as the existing system. Sometimes it may not be possible or practicable and, in some cases, it may be hazardous to replicate historic paints. Modern substitutes containing safer ingredients may be used. Most paint manufacturers make latex and solvent-borne paints in colours that match historic colours in a range of gloss levels that contain no white lead or volatile organic compounds.

If you are unsure of the compatible paint system, seek advice from an experienced painting contractor or a trade representative. For reference, the Australian Standard AS2311:2009 Guide to the painting of buildings has a useful section on maintenance painting systems.

Solvent-borne vs. latex paint

The most common paint systems available are latex or solvent-borne alkyd paints.

Solvent-borne paint

Solvent-borne paint, today's oil paint equivalent, uses linseed oil as a binder with improved, often soy-based synthesised oils known as alkyds. These paints dry hard, have flexibility and discolour less than paints with linseed oil alone. They have high gloss levels.

Latex paint

Latex paints are synthetic resins carried in water. Most quality latex paints contain acrylic resins. Advantages of latex paints include quick drying ability, great strength and cleanable with water. Latex paint often has very

good colour retention with very little fading and is available in a complete range of gloss levels.

Which one?

Generally, quality solvent-borne paint should be applied when repainting over an existing oil-based system and latex paint should be applied over an existing water-based system. Oil paints continue to harden with age and the old surface is sensitive to the added stress of shrinkage that occurs as a new coat of paint dries. Compared with old oil paint, solvent-borne paints generally provide better adhesion than latex paint and shrink less, reducing the likelihood of pulling the old paint loose. Also as exterior oil paint ages, the binder releases pigment causing a chalky surface. While this should be cleaned off before repainting, a new coat of solvent-borne paint is more able to penetrate the chalky residue and adhere than latex paint.

If applying latex paint over several layers of old oil paint, firstly apply an oil primer to create a flat, porous surface. Once thoroughly dry, a latex topcoat can be applied.

Limewash

Limewash was an economic traditional water-based finish for exterior walls. It can be reproduced today in its traditional form but will not adhere to previously painted walls. Some modern proprietary limewash is available with an acrylic sealer that can be applied to painted surfaces prior to the application of the lime wash. This achieves a limewash finish similar to the original finish without removing paint layers back to the substrate.

Distemper

Distemper was a traditional water-based interior paint popular in the nineteenth century. It provided a flat velvety finish and was used on walls and decorative plaster. Distemper had a thin consistency and could be readily removed with hot water. As with limewash, this finish can be reproduced today in its traditional form but will not adhere to previously painted walls. There are also some modern proprietary distempers available that require an acrylic sealer undercoat.

Oiled finishes

Modern oiled finishes are available that can be applied over oils, stains and penetrating finishes on joinery items. Oiled finishes rely on the previous finish being permeable, otherwise the finish will require sanding before the oiled finish is applied.

Epoxies and urethanes

Epoxies and urethanes are hard, inflexible finishes that cannot be easily removed and should not be used to replicate a traditional finish. Use of epoxies and urethanes is not approved under General Exemption.

Take care

Prior to carrying out any surface preparation, the presence of lead paint and the associated health dangers of any paint removal to building occupants and neighbours must be determined and addressed.

Surface preparation

When planning to repaint, the surface condition of the existing painted finish needs to be identified and an appropriate method of surface preparation chosen.

Paint surface conditions can be grouped into three basic categories:

1. minor blemishes or dirt collection that do not require paint removal
2. failure of the top layer or layers of paint which may require limited paint removal
3. substantial or multiple-layer failure requiring total paint removal.

Surface conditions and treatments

Common types of paint surface conditions and failures are identified below and appropriate methods of surface preparation for best adhesion and greatest durability are recommended.

No paint removal

If the surface requiring repainting is sound, cleaning is most often all that is required to prepare it for repainting. Typical conditions that are found on sound surfaces that generally only require cleaning are given below with suggested treatments.

Dirt, pollution and insects

Environmental grime or organic matter can be a barrier to the proper adhesion of paint layers and can cause peeling if it is not removed prior to repainting.

Treatment

Loosen surface material using water—the exterior can be hosed down but not soaked. Using a medium–soft bristle brush, wash the surface using half a cup of household detergent in four litres of water or sugar soap in accordance with the manufacturer's instructions.

Rinse surface thoroughly and allow it to dry before further inspection to determine if repainting is necessary. Cleaning often provides a satisfactory enough result to postpone repainting.

Mould

Mould is caused by fungi that feed on nutrients contained in the paint film or on dirt adhering to the surface, and needs moisture to grow. Moisture in buildings can be the result of flooding, leaks in the roof

or plumbing, inadequate ventilation and excess humidity due to cooking facilities or showers.

Mould is common in damp areas such as bathrooms, kitchens and basements and can also be found under sills and eaves and on shaded areas of the exterior. It most often appears as dark spots, stains or patches and can be identified by dabbing the spot with a small amount of chlorine bleach. If the colour changes or disappears, the stain is likely to be organic and is probably mould whereas dirt will still look like dirt.

Treatment

Altering the environment where mould thrives is one way of preventing fungal growth. Make sure the roof of the building is weatherproof, prune trees to allow sunshine onto a surface, improve drainage around a building and ensure adequate ventilation is provided. A recommended solution for removing fungal growth is one cup of non-ammoniated detergent, one litre of household bleach and four litres of water. The mould should disappear when the surface is scrubbed with this solution using a medium soft brush. For particularly stubborn spots, an additional litre of bleach may be added. Rinse thoroughly.

When repainting, consider using specially formulated mould resistant primer and finish coat.

Excessive chalking

Chalking is a powdery surface deposit caused by the gradual disintegration of the binder in the paint film. It is commonly found on coatings that have been exposed to sun and rain. The powder is the pigment and extender that remains after the binder has been destroyed by weathering.

Treatment

The chalk should be cleaned off with a solution of half a cup of household detergent to four litres of water, using a medium–soft bristle brush. After scrubbing, rinse thoroughly and allow to dry thoroughly (but not long enough for the chalking process to recur) then repaint.

Staining

Staining can be caused by excess moisture reacting with materials in the substrate. There are two common types of staining. One is due to the oxidation or rusting of iron nails or metal. The other is caused by leaching, a chemical reaction between moisture and natural extractives in certain woods that leaves coloured surface deposits.

Leaching is most likely to occur in new timbers within the first 10-15 years, but can occur in older timber if it is redressed.

Treatment

Locate the source of the stain and correct the moisture problem. If the source is a rusting or oxidizing metal element, hand sand and coat with a rust-inhibitive primer followed by two finish coats. Exposed nail heads should ideally be countersunk, spot primed and the holes filled with a high-quality wood filler except where exposure of the nail head was part of the original construction system or the timber is too fragile to withstand the countersinking procedure.

Timber leaching stains can be cleaned with a solution of equal parts methylated spirits and water. After rinsing and drying, a ‘stain-blocking’ primer can be applied (two coats are recommended for severe cases of bleeding prior to the finish coat).

Limited paint removal

Some surface conditions require cleaning and partial removal of the top layers of paint to provide a sound surface. When the surface is in a reasonably good condition this should only require light hand scraping and hand sanding.

Crazing

Crazing usually occurs on a timber substrate and is distinguished by fine, jagged interconnected breaks in the top layer of paint. Paint that is several layers thick becomes excessively hard and brittle with age and can no longer expand and contract with its substrate in response to changes in temperature and humidity. As the timber swells, the bond between paint layers is broken and hairline cracks appear. If not corrected, exterior moisture can enter the crazed surface resulting in further swelling of the wood and, eventually, deep cracking or 'alligatoring' may occur and will require total removal.

Treatment

Treat crazing by hand scraping or hand sanding. Repaint to protect the surface against exterior moisture penetration.

Inter-coat peeling

Inter-coat peeling can be the result of improper surface preparation prior to the last repainting. It most often occurs on protected areas such as eaves that are not regularly rinsed by rainfall. Salt from airborne pollutants builds and if not cleaned off, new paint will not adhere properly and that layer will peel.

Another common cause of inter-coat peeling is incompatibility between paint systems. For example if solvent-borne paint is applied over latex paint, peeling of the topcoat can sometimes occur because the solvent-borne paint becomes harder and less elastic than the latex paint. If latex paint is applied over old, chalking oil

paint, peeling can also occur because the latex paint is unable to penetrate the chalky surface and adhere.

Treatment

Where salts have caused the peeling, wash down the affected area thoroughly after scraping and wipe dry. Hand sand and repaint.

Where the problem has resulted from incompatibility between the paints, the peeling topcoat needs to be scraped and hand sanded. A high quality oil exterior primer will provide a suitable surface over which either a solvent-borne or latex topcoat can be successfully applied.

Solvent blistering

Solvent blistering is caused by the action of ambient heat on the paint solvent or thinners in the paint film. Solvents can be trapped under drying paint film when the paint is applied in direct sunlight. The surface of the paint film blisters as the solvent vaporizes and forces its way through the paint film.

This problem is more common with darker paints as they absorb more heat than lighter ones. Cutting open the blister with a scalpel will identify if the problem is solvent blistering or moisture. Solvent blisters are usually small and the layer of paint beneath will generally be visible. If the substrate is visible it is probably a moisture problem.

Treatment

Blistered areas can be scraped and hand sanded to the next sound layer then repainted. Avoiding painting in direct sunlight will help prevent solvent blistering.

Wrinkling

Wrinkling is caused by the top layer of paint drying before the layer beneath. As the layer below dries the top layer moves. Applying paint too thickly; applying a second coat before the first dries and painting during temperatures higher than recommended are all causes of wrinkling.

Treatment

Remove the wrinkled layer by scraping then sanding to provide as even a surface as possible. Repaint following manufacturer's instructions.

Total paint removal

Total paint removal is not covered by General Exemption.

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Appendix H – Surface Preparation Guidelines (DES Technical Note)

PAINTING—SURFACE PREPARATION

This technical note provides information on various methods of paint removal and surface preparation to help maintain and conserve places on a Heritage Register. Some methods are not suitable for historic places as they may damage significant fabric and remove important paint schemes or finishes.

Background

Paint removal can be laborious and slow, and technique is more important than method. Different paints respond better to different methods. It is helpful to identify the type and thickness of paint and the nature of the substrate before deciding on the removal method. It may be necessary to try several techniques, or a combination of methods to achieve success. Response tests should be made over small trial areas to see if the paint can be lifted and to ensure the substrate will not be damaged. If the wrong removal technique is used it can make the removal of the paint more difficult. Where the problem appears complex or where the building fabric is of considerable historic value, specialist advice or services should be sought.

Topics covered include:

- water washing
- steam stripping
- chemical paint removers—solvent, alkaline, poulticing
- abrasive methods—manual, mechanical
- hot-air paint-stripping
- burning-off methods
- specific problems—timber, brick and stone, plaster, metalwork
- graffiti.

Water washing

Low pressure water washing can be helpful in removing paints but care is needed to prevent water being absorbed into the substrate. Where moisture is able to penetrate behind a paint film that has been lightly scored or is flaking, adhesion will be weakened.

If only a small section is to be removed from an otherwise sound area, there is risk that moisture may become trapped and spread behind the good paintwork causing blistering.

If the surface requiring repainting is sound, cleaning with water and detergent is most often all that is needed to prepare it for repainting. Loosen surface material using water—the exterior can be hosed down but not soaked. Using a medium-soft bristle brush, wash the surface using half a cup of household detergent in four litres of water in accordance with the manufacturer's instructions. Rinse surface thoroughly and allow it to dry before further inspection to determine if repainting is necessary.

Soda, soft soap and other highly alkaline soaps will leave harmful residues and attack new paintwork. Non-ionic detergents are more suitable, i.e. liquid laundry and automatic dishwashing detergents.

Limewash, whiting and soft (size-bound) distemper can usually be removed with warm water. With other water-thinned coatings, adhesion is likely to be loosened when thoroughly wetted. Copolymer emulsion paints can be softened with hot water then sponged, scrubbed or scraped off.

Trial samples

A trial of the paint removal process should be undertaken before proceeding with paint removal across the whole surface. It may be necessary to try several techniques. Response tests should be made over small trial areas in an inconspicuous place to see if the paint can be lifted and to ensure that the substrate will not be damaged.

Do not complete the sample area if first signs show the paint removal method is harming paint layers or building materials.

Steam stripping

Steam—in conjunction with a solvent stripper—can be effective in removing multiple applications of old emulsion paint, including polyvinyl emulsion that has resisted other forms of treatment. Steam stripping can be faster and more effective over large areas than water washing methods. However, it can also be slow and laborious in removing multiple layers of some types of old encrusted paint and results are sometimes patchy.

Water-thinned paints are softened by steam and then removed with a sponge, brush, scraper and water.

Chemical paint removers

There are two main types of chemical stripper: solvent (non-caustic) and alkaline (caustic). Both are available in liquid, gel and poultice form. Manufacturers provide instructions on application, removal and methods of disposal.

Chemical paint removers are flammable and are a health risk. Chemicals can burn on contact with the skin. Vapours and sprays are toxic if inhaled. Operators should work in well-ventilated areas, and wear protective clothing including gloves and facemasks.

Solvent (non-caustic) removers

Solvent removers are usually based on methylene chloride; waxes are included to retard evaporation. Proprietary brands are either water-rinsable or spirit-rinsable. The paint remover is applied with a brush; the solvent swells and softens the paint, which is then removed with a scraper. Proprietary brands of stripper vary and some can be more useful than others in removing a particular type of paint. They are very effective in removing oil-based paints but can be less effective with other types of paint.

Several applications may be necessary where old hard paint has built up in a number of coats and in these circumstances the stripping can be very slow. Preliminary scraping can sometimes be helpful.

Where a surface is to be repainted, waxy residues must be removed according to the manufacturer's instructions. Water-rinsable removers contain an agent that enables the wax to be removed by a thorough wash down with water. With other types, wax deposits are removed with a rag soaked in white spirit followed by a gentle rub down.

Alkaline (caustic) removers

Alkaline removers are based on caustic soda, potash, washing soda or similar material. They are effective but they can create severe problems and should only be used where paints cannot be removed by other means. They are easily absorbed by porous surfaces and the harmful residues are difficult to remove. Application should be restricted to small areas.

They are not suitable for gesso, plywood, veneers or hardboard. They can be harmful to brickwork, stonework, metal and most types of plaster or putty. They may raise the grain of timber and may also darken or bleach some woods.

These removers are effective on oil-based paints—they break down the oil or resins that bind the paint. The softened paint is then removed by scraping or scrubbing with a hard brush and water. This is followed by a thorough wash down with several applications of clear water to remove all traces of alkali that may attack subsequent coats of paint. The surface is tested for any deposits that may remain by placing pink litmus paper against the damp surface If the paper turns blue the surface should be washed again with water containing a neutraliser such as acetic acid.

Caustic removers are available in liquid, paste or blanket form. The stripping blanket prevents the paste from drying out, and the paint sticks to the blanket which facilitates removal. This can be useful where paint is embedded in crevices.

Dipping wood in a caustic tank will destroy natural oils in the timber and glue, and can cause cracking, shrinkage and the opening up of the joints. Proper neutralisation of the alkali is important. This method is not acceptable for significant heritage-listed buildings.

Poulticing

This may be necessary for stubborn areas of paintwork where paint is embedded in pits and grooves such as brickwork, stone ashlar and timber beams. The poultice may be made up by using powdered clay, such as attapulgite or sepiolite, which is added to water and mixed to a paste together with a solvent stripper. Once applied the mix is covered with a thin plastic film that helps to impede evaporation of moisture in the paste. The paste is removed with a knife and the surface is washed down thoroughly with clear water. A sponge or bristle scrubbing brush may be necessary to remove any paint residues. Proprietary caustic-based poultices are also available.

Abrasive methods

Any abrasive method of paint removal requires a great deal of care in its execution. Sandblasting, water blasting and harsh mechanical sanding can irreversibly scar or damage timber, plaster and masonry surfaces, and release toxic lead fumes or dust into the environment.

Manual abrasive methods

Paint was often applied to original surfaces without prior sanding. If the paint or varnish has become brittle it should flake off when scraped. For small areas, hand scraping using a paint scraper or putty knife should be considered before mechanical methods. Hand sanding using wetted medium-coarse glasspaper wrapped round a wood block is suitable for removing a thin film of paint from timber. The careful use of carborundum blocks and water is laborious but often effective.

Mechanical methods

Mechanical methods should only be used as a last resort and only if removal of paint can be done without risk of damage to the substrate, as the surface can easily be removed in the process. The system is sometimes used to remove multiple layers of old paintwork or certain two-part paints that do not respond to other forms of paint removal.

Hand-powered tools used with sanding attachments such as disc and drum sanders, flap wheels or rotary strippers are generally only suitable for flat surfaces or for fences or claddings that are to be stained rather than repainted. Working along the grain is important; scratches and ripples on the surface are a common problem.

Blast cleaning with high pressure air and water abrasive systems is likely to cause damage to the heritage-listed place and should not be used.

Hot-air paint stripper

This system is similar to the burning off method but fire risks are less as the temperature is lower. Hot air is produced by an electric filament and the heat can, in some cases, be adjusted with temperatures ranging from 20- 600 degrees. This tool is designed to soften and blister oil-based paints and varnishes. The paint is then scraped away with a stripping knife or scraper. For awkward crevices and delicate work, a shave-hook is used.

Hot-air strippers are not suitable for removing water-based paints, some primers and undercoats, or for removing paint from metal or plaster. They should only be used on masonry when thick layers are to be removed. Special nozzles should be used on window frames and the glass should be protected against heat cracking. Do not use this method on frames containing old glass, as this is irreplaceable. The method is fast and effective on wood surfaces but if hurried it is easy to damage mouldings with the scraper. The absence of flame decreases the risk of fire damage but the surface of wood can become slightly scorched if the tool is directed too long in one place.

This system has been known to ignite flammable materials such as dust in sash boxes.

Inappropriate use of heat guns can irreparably damage timber or start fires by igniting dust or other matter that may have built up inside the walls of the building. Considerable care needs to be taken if adopting this method of paint removal.

Burning-off methods

Fire risks are high with this method and it is not recommended for historic buildings. The risks involved in using this method on older buildings are so great that some contracts ban blowlamps and blowtorches on site.

Blowlamps or blowtorches are used to soften paint before scraping with a knife, scraper or shave-hook. The method is quicker than other forms of removal but poses serious risks to an older building where fire hazards may be greater.

The method is effective on oil-based paints but not water-based coatings. It should never be used to remove flammable coatings (for example, some cellulose enamels). With some emulsion paints minute explosions can be caused, resulting in showers of hot particles. Paint is difficult to remove from crevices.

There is a danger that the paint itself may catch fire but also that rotted timber below the paint film may ignite without being immediately noticeable—timber may smoulder unseen for several hours. Electrical insulation may also be damaged. Stripping a sash window can be particularly dangerous where dust in the sash box may be ignited and not be visible. It is easy to scorch wood and crack glass.

Specific problems

Timber

Solvent strippers are successful in removing oil paints, tar and some emulsion from timber surfaces. Used in poultice form they help to dislodge paint embedded in grooves. After stripping, the residues should be washed down with white spirit as water can raise the grain and darken the timber.

Rubbing down should follow the direction of the grain. Wire wool is best avoided for this purpose as fragments of metal can become lodged in fissures and, where moisture is present, can cause staining.

Mechanical methods— such as grit blasting—will spoil the surface of the timber and should never be used on an older building.

Brick and stone

Moisture in an older wall can become trapped behind a paint film and weaken its adhesion. Alkali from lime mortar and soluble salts may also attack oil-based paints.

All methods of removing paint from brick or stone will damage the base material to some extent. Although removing the paint should benefit the wall, the ideal course would be to allow the paintwork to weather and disintegrate naturally. During the intervening period, a coat of limewash of a similar colour will improve the appearance of the wall.

With many modern paint types, breakdown of paintwork on damp or eroded brick or stone is likely to occur within five years. Solvent strippers can be successful in softening many types of modern paints. Poultice treatment may be necessary where paint is embedded in grooves. Deposits can be removed with water under minimum pressure. Layers of paint can be difficult to remove from very porous brick or stone. Hot air, alkaline strippers and air-abrasive methods may damage the substrate.

Plaster

To remove paint from plaster, keep water to a minimum; prolonged soaking will soften plaster, especially gypsum-based plasters.

Water washing, hand sprays, and steam and solvent strippers help to loosen paintwork. The choice depends upon the type of paint to be removed. It is an advantage when repainting old plaster—particularly decorative work—to use limewash, whiting or soft distemper (size-bound, non-washable). These can be washed off between applications. This will prevent a build-up of paint and a loss of detail.

Metalwork

For non-ferrous metals, solvent strippers based on methylene chloride are more effective if applied in poultice form and left in position for about two hours. Residue is removed with white spirit.

For ferrous metals, solvent or alkaline type strippers or mechanical systems should be used. An alkaline (caustic) stripper in poultice form can be successful—it slows down corrosion and does not roughen the surface. Neutralising with acetic acid is necessary after application. If the caustic solution becomes embedded in crevices and joints it may be difficult to neutralise and corrosion is likely in these areas if moisture penetrates.

Mechanical methods include the use of a chipping hammer or mechanised needle hammering—both methods are slow. Air and waterborne abrasives are useful on cast iron. A fine grade of crushed copper slag is normally used as the grit. The surface of the metal should be primed immediately after blasting to prevent rust formation. Grit blasting will destroy a smooth surface on wrought iron. Paint and mill-scale can also be removed by using the oxyacetylene flame-cleaning system.

Graffiti

There is no general solution to the removal of graffiti but it is important to begin treatment as soon as possible so paint does not have time to harden. Seek advice before proceeding with any treatments.

Longstanding aerosol paints are almost impossible to remove from porous surfaces such as brickwork and stonework. There is also a risk of spreading the paint and increasing absorption in the process. Cleaning with an air-abrasive pencil using a suitable fine abrasive—followed by toning down the cleaned patch by rubbing with stone or brick dust—may be successful. A solvent-based (non-caustic) poultice should be tried—if this fails an alkaline (caustic) remover in poultice form might be effective. The brick and stone must be thoroughly washed afterwards. A second poultice (without the chemical incorporated) can be applied to help draw out the residual salts.

Anti-graffiti coats are available to protect walls but can create problems by trapping moisture and salts behind an impermeable membrane.

Caution

When considering repainting and preparing surfaces for repainting, consider that buildings constructed before the 1960s will have one or more layers of lead-based paint. Paint removal will require dealing with toxic substances, along with the hazards of paint removal tools and chemical strippers. Anyone carrying out paint removal work should also be aware of local and state health and environmental regulations for hazardous waste disposal.

Lead concentrations in paint

Paints containing high concentrations of lead were used extensively on the inside and outside of houses built before 1950. Some of these earlier paints contained up to 50% lead. Until the late 1960s, paint with more than 1% lead was still being used. In 1992, the National Health and Medical Research Council (NHMRC) set 0.25% as the maximum allowable amount of lead in domestic paint. Dry sanding, especially with a power sander, can spread contaminated dust. Heat removal methods can cause toxic fumes. The greatest care is needed when disturbing old lead paint because this is when it is most dangerous.

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Appendix I – BHS Strategic Plan 2018

BUDERIM HISTORICAL SOCIETY INC

STRATEGIC PLAN 2018-2023

Our VISION is to keep Buderim's history alive through conserving, preserving and researching its past.

Our MISSION is to conserve and preserve Buderim pioneer history, artefacts and data, for utilisation by our community and visitors.
as a background resource to modern regional development and lifestyles.

WHO we are

The Buderim Historical Society (BHS) was formed at a public meeting on 4th March 1966 to help in the restoration of Pioneer Cottage to a Historical Museum deeded to the Buderim community by Sybil Vise. Pioneer Cottage was officially opened on 23rd September 1967. The BHS sought incorporation which was agreed to on 29th May 1990. On 11th March 1990, the Pioneer Cottage was listed under the National Heritage Building Protection Act which placed restrictions over development of the site. The Environmental Protection Agency (EPA) now exercises oversight of this Heritage site.
On the death of Sybil Vise in 2000 her home, Vise House, was bequeathed to the BWMCA. The BHS requested that this house be developed by the Society as a "History Resource Centre" for the Buderim Community. A formal Memorandum of Understanding and lease agreement was drawn up between the BWMCA and BHS and signed on 11th November 2005. Provision was made for the Buderim Foundation to sub-lease part of the redeveloped Vise House as its administration centre. This was completed in 2006. The memorandum of understanding has been replaced by a three-year lease agreement executed in October 2015.

WHAT we do

- Preserve historical assets, achievements, data and collections with a focus on the period 1876 -1950's for objects in the collection; and for paper-based items, photographs and historical digitised recordings to the present.
- Serve as a resource centre to assist identification, value, collection and preservation of Buderim and local history.
- Support education and research through providing a greater understanding of our past.
- Collaborate with the community and local organisations.
- Utilise the strength of the Buderim Historical Society through its members and volunteers with respect for individuals' skills and interests and their roles in the Society.
- Ensure that processes and procedures are in place to enable appropriate governance for the smooth running of the Society.
- Monitor the organisation to continuously improve its operation, historical collection and facilities.
- Are affiliated with the BWMCA.

Our VALUES

- A practical approach
- Fostering of team ethos
- Service to the history of Buderim and its community
- Providing mutual support and encouragement for members and volunteers.

Our CHALLENGES

Relevance

One of the greatest challenges for the BHS is to ensure that the society remains relevant to values and expectations of the Buderim community.
To achieve this, we must:

- Uphold the values of the Society.
- Maintain our focus by an annual review of progress of our strategic plan.
- Provide leadership and direction on actions to maintain our responsibilities.
- Nurture a sense of belonging.
- Adopt a flexible approach to changing demographics and environmental factors.

Administration

One of the measures of success of any organisation is the way in which the business is conducted and its resources are managed. To guarantee our continued success, the BHS must ensure that:

- The structures and processes are in place to efficiently manage resources – people, finance and physical assets.
- Sub-committees/working groups are aware of their responsibilities and delegated powers.
- We have the ability to organise resources and harness the energy of the community.
- We have plans in place to ensure continuity of management.

Relationships

We will only succeed in meeting our objectives by maintaining harmonious relationships with our internal and external supporters. These are our members, sub-committees, working groups, government organisations and representatives and other sectors of the community.

Our People

Our people are our greatest asset. They are all volunteers who give of their time freely. We must respect them, nurture them and guard against 'burn out'. We must also ensure their efforts and achievements are recognised and celebrated.

Our GOALS and STRATEGIC PRIORITIES

Our goals are to:

- **Conserve, preserve and manage the buildings, Museum, artefacts, pioneer historical collections, gardens and records of the Society.**
- **Facilitate and promote research of the history of Buderim and adjacent localities.**
- **Inform the local community and those visiting the area about the history of Buderim.**
- **Increase community involvement in the Society.**
- **Broaden access to our collection through digitising significant collection items to supplement and enhance access to the collection and facilitate the development of new content opportunities.**

Our STRATEGIC PRIORITIES to achieve these goals are to:

1. **Maintain the efficiency and effectiveness of the BHS administration and management based on the National Standards for Australian Museums and Galleries.**
2. **Provide and maintain a safe facility for volunteers, visitors and staff who attend Pioneer Cottage and Vise House and grounds.**
3. **Initiate and undertake related training activities for members and volunteers and to avail ourselves of relevant training provided by other organisations.**
4. **Publicise and promote the work and activities of the Society through a range of media platforms to stimulate public interest, support and appropriate use of the facilities.**
5. **Undertake and promote research activities of both past and recent historical activity in Buderim and adjacent localities.**
6. **Conserve, preserve and develop the buildings, museum, artefacts, pioneer historical collections, gardens and records of the Society as an ongoing process, especially interpretive commentary of significant items and stories.**
7. **Continue the digitisation process, as resources permit, to enable clients, regardless of location, to access and use a range of Buderim history content.**
8. **Develop a long-term (10 – 15 year) plan for on-going development and responsibility for Pioneer Cottage and Vise House, contents and archival information.**

STRATEGY	ELEMENTS	BUDGET/ ACTION	INDICATORS	REVIEW
1. Maintain the efficiency and effectiveness of the BHS administration and management based on the National Standards for Australian Museums and Galleries.	• Effectively and efficiently administer the administrative and business affairs of the society • Actively pursue grant funding for operating costs. • Undertake fundraising and seek financial support for the ongoing work of the Society. • Prepare and manage the annual budget and achieve transparent reporting • Seek Executive Committee Members and volunteers with diverse skills • Identify and emphasise priority areas of development and activity • Evaluate and report on progress at monthly meetings, AGM's and newsletters to members and councillors etc. • Progressively review policy and procedure documentation at least 3 yearly. • Undertake succession planning for the organisation's administrative continuity and future.	Budget allocation and strategies to be included in all Management Committee meetings.	• Effective operation of the budget, grants received and acquitted. • Volunteers are recruited and roles understood. • Assignment of priorities conducted • Appropriate election of officers. • Record list of policy and procedures, frequency of review and by whom. • Plan major fundraising activity: St Patrick's Day Concert (March, 2019)	Annual (AGM) and monthly (Management Meeting)
2. Provide and maintain a safe facility for volunteers, visitors and staff who attend Pioneer Cottage and Vise House.	• Detail measures in Health a Health and Safety Plan for Buderim Historical Society to provide for personal, fire and electrical safety as well as hazards/risk identification and management for the premises.	Plans developed and reviewed annually	• Public liability insurance for volunteers and visitors • Organisations hiring facilities provide a Certificate of Currency • Fire and Evacuation Plan documented for Pioneer Cottage and Vise House • Fire equipment checks (6 monthly) • Annual Fire and Emergency evacuation training for volunteers • Safety audits (3 monthly) • Blue card registration for volunteers assisting with school groups • Health and safety course attended • Nil preventable incidents • Annual review of Health and Safety Plan and associated documents.	Monthly (Management Meeting) and 3 monthly walk- around safety checks.

STRATEGY	ELEMENTS	BUDGET/ ACTION	INDICATORS	REVIEW
3.Initiate and undertake related training activities for members and volunteers and avail ourselves of relevant training provided by other organisations**.**	• Review methods of recruitment of members and volunteers • Increase membership of BHS through targeted activities in the community • Review ways to develop members and volunteer skills • Develop in the organisation a sense of comradeship, co-operation, enjoyment, satisfaction and achievement among members.	Through members, BWMCA, via Press, Website & Facebook.	• Increased membership numbers • Increased volunteer numbers. • Skill requirements identified • Skills development activities undertaken	Monthly (Management Meeting) and ongoing
4. Publicise and promote the work and activities of the Society through a range of media platforms to stimulate public interest, support and appropriate use of the facilities.	• Implement methods to publicise the special activities and work of the Society. • Invite appropriate individuals and organisations to assist in work, promotions and marketing, including local government councillors, local state and federal political representatives. • Develop and undertake an annual program of outreach activities and educational programs to create and promote interest in the work of the Society, in the community. • Develop and maintain links with educational institutions such as universities, schools and colleges to fit with their curriculums. • Establish links with heritage and other groups to further the activities and work of the Society. • Develop and maintain links on Web Site and Facebook. • To increase BWMCA awareness of BHS plans, activities and accomplishments.	Budget to include advertising. Develop media releases.	• Recognition by public • No. of Community businesses supporting work of BHS & PC • Develop topics for USC Marketing students' projects • No. of visits: Community groups Schools students Tertiary students Local/Interstate/ International visitors • Links established and active. • Regular history talks for entertainment and education. • Plan for contributing to special community events • Delegate attendance at BWMCA meetings.	Monthly (Management Meeting) and ongoing Monthly BWMCA meeting

STRATEGY	ELEMENTS	BUDGET/ ACTION	INDICATORS	REVIEW
5. Undertake and promote research activities of both past and recent historical activity in Buderim and adjacent localities.	• Identify research needs • Foster support and interest in local scholarly research activity • Seek and acquit grants from government and private organisations to purchase equipment and resources for research • Train volunteers to become guides and fulfil other roles such as data entry and conservation • Encourage USC students use of the facility for research purposes. • Identify and provide support for a volunteer research assistant interested in our history.	No budget requirement Grant application as necessary	• Data base progressively improved. • No. of successful grant applications submitted and acquitted. • No. of Volunteers trained • USC student interest identified. • Feedback received re suitability for course work • Volunteer research assistant appointed. • Investigate availability of Indigenous and SSI local history.	Monthly (Management Meeting) and ongoing
6. Conserve, preserve and develop the buildings, museum, artefacts, pioneer historical collections, gardens and records of the Society as an ongoing process, especially interpretive commentary of significant items and stories.	• Develop plans for maintenance, repairs, renovations and improvement of the facilities in conjunction with the BWMCA Asset Management Plan. • Review the Museum's collections, contents and displays • Enhance the development of a professional data base of documents, graphics, artefacts and collections • Increase and ensure security of both our volunteers and the collection • Review compliance with the National Standards for Australian Museums and Galleries. • Maintain links with the Burnett and Vise families.	Specific Council grant applications Donations Consult re security requirements	• Conservation Plan developed and implemented. • Conservators appointed. • Provide educational opportunities for new assistant Conservators. • Continue accessioning and de-accessioning of objects in the collection. • eHive data base progress reported. • Scope and develop Interpretive Plan. • Complete Preservation Needs Assessment • Implement recommendations • Undertake Visitor Satisfaction surveys • Security needs identified. Viable solutions implemented. • Continue the cleaning schedule for the collection and storage areas. • Ensure pest control undertaken as scheduled.	Monthly (Management Meeting) and ongoing

STRATEGY	ELEMENTS	BUDGET/ ACTION	INDICATORS	REVIEW
7. Continue the digitisation process, as resources permit, to enable clients, regardless of location, to access and use a range of Buderim history content.	• Enhance access Buderim's cultural heritage by increasing the scale of our digitisation activities. • Commit to both the protection of creator's rights and to providing the greatest possible access to our collections, working within the framework of the Copyright Act 1968 (Cth) and the use of Creative Commons licences for the content we create. • Adhere to protocols for Aboriginal and Torres Strait Islanders Collections. • Focus on our unique material thus providing a critical mass of digital information, enhancing our community's knowledge. • Commit to the preservation and care of original items we digitalise. The production of digital surrogates will reduce the need for future handling of these items. • Digital versions of materials will represent originals as closely as possible. • Continue to seek opportunities to collaborate with other institutions. • Ensure long term access to legacy formats no longer accessible e.g. audio cassettes. • Capture progress of the Buderim community via oral, written, audio-visual stories of indigenous and significant early settlers, as well as community progress through the 1950's – 70's.	Grant application if necessary. Consultation with State Library and Sunshine Coast Council Heritage staff as necessary.	• Review our Digitisation policy. • Complete Accession register upgrade to eHive by adding more detail regarding provenance of significant objects in our Collection • Identify documents requiring digitisation to enable public access. • Provide sessions to enhance expertise in operating audio-visual equipment • Records of History talks and interviews are kept in a readily accessible format. • Transfer audio cassette recordings to digital format. • Complete development of new BHS website. • Consider publishing relevant historical stories.	Monthly Management Committee meetings.
8. To develop a long-term (10 – 15 year) plan for on-going development and responsibility for Pioneer Cottage and Vise House, contents and archival information.	• Develop plans in partnership with the BWMCA for the continuation of the present operation of the Pioneer Cottage and Vise House. • Aid both the BWMCA and the Sunshine Coast Council in the development of an Archival Interpretative building. • Research ways of ensuring adequate parking and storage for the future.	Liaise with the BWMCA and Local Councillors	• Renew 3 year Lease agreement (Oct, 2018) • Meet with BWMCA 3 monthly • Meet with SCC representatives as needed.	Annual Review.

References:

Museums Australia Strategic Planning Manual, 1998

National Standards for Museums and galleries, Version 1.5, 2016

Museums Australia Code of Ethics

The Burra Charter, 2013

South Australian Community History: Cleaning in Museums, Housekeeping Schedule, managing pests in the collection: Integrated Pest Management

State Library of Queensland Digitisation Policy

May, 2018

Appendix J – Buderim Pioneer Cottage Interpretation Plan 2018

INTERPRETATION PLAN

PIONEER COTTAGE, BUDERIM, QLD

Stage 1

June 2018

TIMELINE HERITAGE

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Buderim Historical Society is at an exciting crossroads that presents both great opportunity and also challenges relative to its future management. Following its recent participation in the MAGSQ Standards Review Program, the Buderim Historical Society is now positioned to refine the interpretation of its key stories and reaffirm the identity of the associated Pioneer Cottage as a unique heritage destination.

The development of an Interpretation Plan seeks to address these ambitions, through the presentation of specific initiatives focused on the re-interpretation and display of the existing Pioneer Cottage collection; the development and utilisation of media content; mission and marketing values; public programming; and community partnerships.

This plan is a tool for defining *what* and *how* the Buderim Pioneer Cottage and Historical Society will communicate to its visitors. It intends to shape the major priorities with specific management actions that will support the sustainable, effective interpretation of its collection into the future. It imagines a dynamic historical site at the heart of the local community— one in which the Buderim Pioneer Cottage and Historical Society collectively and actively share stories of significant people, lifestyles and places that engage both local residents and visitors from afar.

With the completion of this Interpretation Plan, the Buderim Historical Society is well positioned to take strategic direction and commission grant applications based on the heritage interpretation objectives identified in this document. It is intended to serve as a key component of the larger planning process for the Buderim Historical Society, augmented by the Significance Assessment (2017) and Strategic Plan 2013-2018.

1. INTRODUCTION

The following Interpretation Plan strives to enrich the lived experience of the on-site Buderim residents and transform the Pioneer Cottage into a relevant and attractive heritage destination for wider domestic audiences from the local area, Greater Brisbane, Queensland and interstate, as well as international visitors. As the principal guiding document, it not only seeks to establish the interpretive priorities of the Pioneer Cottage, but also to define an engaging visitor experience in which the presentation of the Pioneer Cottage's collections and the interpretation of its significant stories will be more effectively realised.

Objectives

In consultation with the volunteers of the Buderim Historical Society, the primary objectives of this Interpretation Plan are as follows:

- To improve the visitor experience of the Buderim Pioneer Cottage
- To establish a thematic rationale for the re-interpretation and re-display of the collection
- To define existing and target audiences in order to attract new and returning visitors
- To highlight opportunities for developing public programming and community partnerships
- To define a strategic direction for the delivery of these objectives, including information that the Buderim Historical Society can use in, and to support, future grant applications

Project Outline

In recent years, the Buderim Historical Society has progressively made substantial improvements to its stewardship policies, supported by the Sunshine Coast Council (SCC) and MAGSQ. Together with the Buderim War Memorial Community Association, volunteer staff are now concerned with the long-term preservation and interpretation of Pioneer Cottage, as well as the more effective promotion of the collection's significant stories regarding the Burnett family history, Sybill Vise, the development of the Buderim district and the lifestyles of the late 19th and early 20th centuries.

In 2017, the Buderim Historical Society participated and completed a Standards Review process with MAGSQ. One of the recommendations arising out of this professional development process identified the need for the development of an Interpretation Plan "to "improve the experiences of visitors, and to allow key stories of the cottage and Buderim to be more effectively transmitted" (Roper and Mate 2017:3). In response to this recommendation, Buderim Historical Society subsequently engaged Timeline Heritage, a local cultural heritage provider, to assist in the professional delivery of an Interpretation Plan for Pioneer Cottage.

Approach

The methodology adopted for the development of a *relevant* and *strategic* Interpretation Plan for Buderim Pioneer Cottage is as follows:

- Identify existing audiences, key collection items and storylines, policies, programs etc.
- Outline the relative strengths, constraints and opportunities
- Profile the resident community and current visitors to understand the potential audiences
- Define an interpretive framework with specific heritage objectives
- Provide practical recommendations regarding the implementation of these objectives

In the preparation of this Interpretation Plan, there is insufficient time to undertake detailed research into all aspects of the Buderim Pioneer Cottage and its collection. The research undertaken by Timeline Heritage was thus augmented by the existing documentation relating to the future management and strategic objectives of the Buderim Historical Society: *Significance Assessment* (2017) and *Strategic Plan* 2013-2018.

Authorship

The development of this Interpretation Plan was undertaken during 2018 by Steve Chaddock and Jessica Heidrich of Timeline Heritage, in consultation with members of the Buderim Historical Society.

The consultants would like to particularly acknowledge the support and input of the staff and volunteer team of the Buderim Historical Society.

2. BACKGROUND

Buderim Pioneer Cottage

The Buderim Pioneer Cottage and its collection is housed in a small heritage precinct at 5 Ballinger Crescent, Buderim. Set in a mature garden, the site encompasses a suite of buildings including the Pioneer Cottage (the 1882 residence of the Burnett family), a timber slab hut and a contemporary brick structure known as the 'Sybill Vise House'. The timber and tin Pioneer Cottage is recognised as a place of local and State heritage significance, with listings on the Sunshine Coast Planning Scheme (2014) and Queensland Heritage Register (600688).

In 1966, Sybil Vise transferred the original Burnett residence and the associated land to the Buderim War Memorial Community Centre (BWMCC), to be held in trust for the Buderim community as a tribute to its early pioneers. The Buderim Historical Society was subsequently formed under the auspices of the BWMCC to assist with the establishment of the Pioneer Cottage as a museum and heritage destination. The Pioneer Cottage was officially opened on September 23, 1967 and is currently owned by the Buderim War Memorial Community Association (previously BWMCC), but managed by the Buderim Historical Society.

For a more comprehensive history, see Hogarth's (2004) publication, *Pioneer Cottage: The House that Buderim Saved*.

Vision and Mission

Presently, the long-term direction and values of The Buderim Historical Society are expressed in the following statements:

Vision

To keep Buderim's history alive through conserving and preserving its past.

Mission

To conserve and preserve Buderim pioneer history, artefacts and data for utilisation by our community and visitors.

Volunteers

The Buderim Pioneer Cottage is currently operated and managed by a dedicated group of 27 Buderim Historical Society volunteers. Each year, a volunteer-management committee is elected, with active sub-committees for fundraising initiatives and garden maintenance.

This team has consistently strived to develop and refine its operational practices and the management of the historical collection. As evidenced by its recent completion of the MAGSQ Standards Review Program, the staff and volunteers of the Buderim Historical Society are proactive in seeking strategic advice and assistance from heritage or museum professionals with a view towards improving their care of the collection and engaging their visitors.

This commitment by a group of active volunteers is also demonstrated through the successful establishment of the volunteer-led tours of the Pioneer Cottage as a standard feature of the visitor experience. The Society also holds monthly History Network Meetings, attended by guest speakers on alternate months.

Collections

The Buderim Historical Society is the custodian for a diverse social history that relates to the localised development of Buderim, as well as the broader regional development of the Sunshine Coast. This broad scope is primarily illustrated through the historical collection housed in the Pioneer Cottage, encompassing over 5400 items.

At a historical level, this collection is both *locally* and *regionally* significant for its ability to demonstrate regional industries and domestic and civic life in the Buderim and Sunshine Coast district, particularly during the late 19th and mid-20th century (Crozier, Schutt and Mohr 2010). It is representative of the patterns of settlement and ways of living and working that shaped home and family life in the early development of the Sunshine Coast Region.

Generally speaking, the historical collection is in good to excellent condition (see Significance Assessment 2017:11). However, due to the challenging environmental conditions imposed by the heritage building environment, a preservation needs assessment by a qualified conservator remains outstanding.

Conceptually, the collection can be categorised into six distinct sub collections:

Objects

Over 1300 items predominantly exhibited in the Pioneer Cottage and outbuildings to create an evocative depiction of domestic life and local industry during the late 19th century.

Textiles

Over 1100 items primarily consisting of domestic clothing, costume, haberdashery, manchester, lacework and other textile-based objects. This sub-collection occupies a proportionally large footprint in terms of space and resources due to its high susceptibility to degradation or pest infestation.

Library

Over 750 items comprising of published works including books, periodicals and audio-visual materials primarily relating to the history of Buderim and the Sunshine Coast Region.

Oral History and Lecture Series

Over 30 audio or audiovisual recordings in a range of formats including magnetic (cassette) tape, CD and DVD.

Paper-based and Archival

The archival collection is estimated at approximately 2.5 running metres. It includes press clippings, local ephemera, letters, unpublished recollections and memoirs, and records pertaining to local organisations and clubs. Of particular note are files pertaining to the Buderim Progress Association and the Buderim Ginger Festival committee.

Photographic

Composed of over 2000 images, including colour, black and white and sepia prints. It contains both original prints and surrogates, in both hard copy and digital formats.

Management

The Buderim Historical Society and its volunteers have made concerted efforts to improve the standard of collection care and documentation, realised through the development of a Collection Policy (2002) with criteria for accessioning, loans and deaccessioning. Collecting is largely opportunistic, typically based on donations from the public, and there is a strong understanding of constraints on collecting posed by the lack of space available onsite. The current scope of the Pioneer Cottage collection, as outlined in the Collection Policy Guidelines (2002), is broad and focused on the time period from c. 1876 to c. 1950. It can be interpreted as generally focused on historical artefacts related to Buderim, its residents, the Burnett family and the Pioneer Cottage.

The Collection Policy specifies the following focal points:

- *Items of significant historic value owned and used by a resident of Buderim*
- *Everyday items of the period which show the technological development that enhanced living and working conditions especially in the home*
- *Lace, linen, embroidered items and handmade clothing, especially of children*
- *Household items which record the ingenuity of people during hard times*
- *Wartime memorabilia*
- *Photographs, post cards, newspaper cuttings, articles and letters that describe Buderim, its citizens and activities*

In addition, the Buderim Historical Society has taken steps to integrate technological media for collection management purposes within the museum. The object, textile, book and archival collections are currently recorded in a self-developed Microsoft Access database; however, proactive measures are being taken to begin migrating the collection database to a new collection management system, e-Hive. In addition, the photographic collection is documented digitally in a series of Microsoft Excel spreadsheets and Microsoft Word documents.

While not entirely comprehensive, these approaches have enabled the volunteer-led staff to progressively review and address the basic needs of collection documentation and image preservation. This process has also necessitated the development of a new data backup procedure, including secure storage in a fireproof safe onsite and holding offsite copies of the collection database files.

Education

The Buderim Historical Society and Pioneer Cottage already has an evident commitment to children's education in its values and mandate statements. In a broad sense, the strengths of the Society's education initiatives are seen through the provision of historical content informally through volunteer-led tours of the Cottage with specific attention to the stories and history of the Burnett family and life in early Buderim.

Currently, the Buderim Historical Society has a partnership with the Sunshine Coast Environmental Education Centre (formerly known as Bilai), who provide specialist education programs, professional development, advice and resources to meet the ongoing curriculum needs of Sunshine Coast students. As part of this partnership, Bilai has facilitated half or full day school visits to the Buderim Pioneer Cottage inclusive of travelling teaching staff and resources. Working with Bilai has evidently enabled the Buderim Historical Society to offer new learning opportunities to schools within their community and to provide enjoyable, first-hand learning experiences. However, this educational outreach program has to date been primarily focused on an early primary demographic.

In addition, the Buderim Historical Society has invested in the development of an educational excursion package aimed at Year 5 primary students. Entitled 'Back in Time to 1891', the package is orientated around the day-to-day life of the members of the Burnett family, the original occupations of the Pioneer Cottage, and the challenges faced by early settlers to the Sunshine Coast Region. Students are given the opportunity to choose a Burnett family member and then use this 'character' as a framework for a series of questionnaires, team challenges, role play scenarios and object interactions that take place in particular rooms within the Cottage. The accompanying information kit is detailed: it contains an overview of the suggested excursion program; resources for all excursion teaching activities, including pre- and post-visit; and a rationale of curriculum connections.

The major strength of this educational package is that it provides opportunities for young children to be active participants in learning about the history of Buderim Pioneer Cottage by interacting with real objects and adopting and/or researching the persona of a real-life figure associated with the Cottage. It is an approach that helps to give a sense of human 'presence' to the history of the Cottage by creating a connection between visitors and the people that once occupied the Buderim area. In addition, it is an approach that has a strong potential to exploit the natural curiosity of young visitors and facilitate points of critical discussion or reflection. Finally, it has been deliberately designed to align with particular standards of the Year 5 History and Geography curriculums.

But while it is active (in the sense that visitors are learning through "doing" and "discovery"), the majority of the educational content revolves around transmitting a pre-determined and at times, quite detailed body of knowledge. In effect, it is subject-based, rather than grounded in a thematic framework. In addition, the effectiveness of this approach is somewhat limited by the

size of the visiting group: the larger the group, the more difficult it is to elicit the level of interactivity required.

The Pioneer Cottage site comprises one of the oldest surviving residences in the region that, alongside the historical collection, constitutes a rich source of information highly appropriate for educational engagement. However, there is a need to better develop and maintain links with educational institutions in the local community, as well as in the broader Sunshine Coast region. This includes primary and secondary schools, as well as universities and colleges with courses aligned with the disciplines of history, heritage management and museums.

Community

The Buderim Pioneer Cottage is a community museum with a distinctly local focus, particularly concerned with the long-term preservation of Pioneer Cottage and the social history surrounding its use and the development of the Buderim district. Its promotion of the Pioneer Cottage as a 'piece of living history' and the recent development of the Sybill Vise House into a "History Resource Centre" demonstrates the awareness that Buderim Historical Society has of its role in the local community.

More consideration, however, could be given to further enhancing working relationships with local businesses and associations, particularly with the Buderim War Memorial Community Association given their shared custodianship of the Pioneer Cottage. There is also an emerging need to advocate increased community involvement in the activities and interests of the Buderim Historical Society through the facilitation of new outreach programs.

3. APPROACH

Audiences

The Pioneer Cottage is located in the township of Buderim, one of the urban centres on Queensland's Sunshine Coast within the Local Government Area (LGA) of the Sunshine Coast Region. With an estimated population of over 29,000 and its position only 10 minutes drives from several major coastal centres (Maroochydore, Mooloolaba, Alexandra Headland), there is a considerable local population who will consider this site an easy-access leisure destination for short or day trips. This visitor demographic is highly likely to value the promotion of local history in a recreational, yet informative format (e.g. through temporary exhibits and public events).

While the Pioneer Cottage is located in easy reach of the population centres of Buderim, Tanawha, Mons, Forest Glen and Mountain Creek and North Brisbane, it is a relatively short drive from Central Brisbane and therefore, has the capacity to draw visitors from the Greater Brisbane Region with a total population number of about two million. The site is also extremely

well placed to attract tourists and travellers moving along Australia's primary eastern coastal Route M1, the Bruce Highway.

On average, the Buderim Pioneer Cottage receives 1400 visitors annually. Between 2014 and 2017, this visitor base has been steadily growing with an average increase of at least 400 visitors per year. Each of these visitors have either an established geographic or historic relationship with the Pioneer Cottage and Buderim, or present themselves as a visitor type that would enjoy and benefit from the educational and environmental aspects of the site.

The current visitor demographic comprises a range of broad groups, including

- Local residents;
- Day tripping families, tourists and/or leisure groups from elsewhere in Queensland;
- Day tripping families, tourists and/or leisure groups from interstate;
- International visitors; and
- School students.

A review of the 2014 - 2017 period indicates that the largest visitor base for the Buderim Pioneer Cottage's visitor base is local residents from Buderim and the Sunshine Coast region, followed by primary school students engaging in educational day programs. In terms of age, the majority of visitors are either seniors (aged 60+ years) or young children (aged 0-10 years).

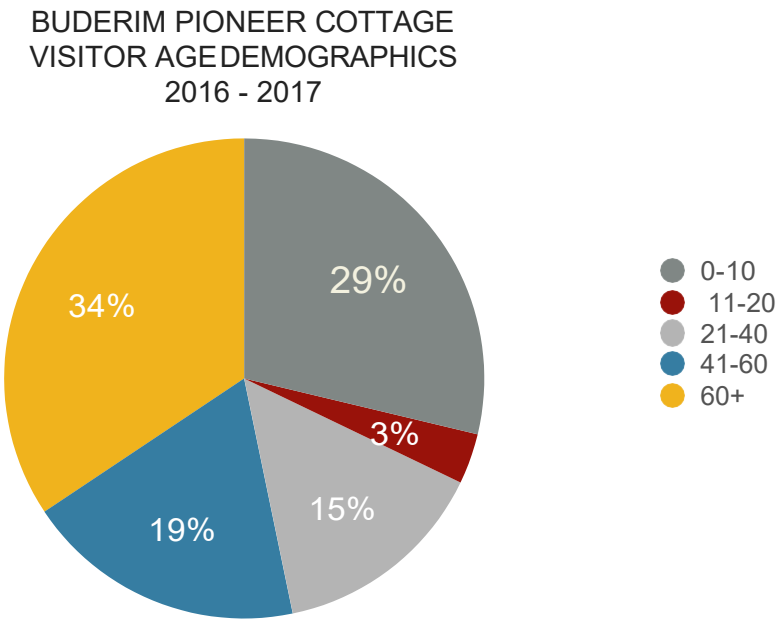

Figure 1. The percentage of visitors to Buderim Pioneer Cottage (2016-2017) according to age.

Teenagers (aged 11-20 years) form the smallest proportion of visitors to the Buderim Pioneer Cottage, followed by adults aged between 21 - 60 years (Figure 1). In terms of gender, the Buderim Pioneer Cottage consistently receives both male and female visitors; however, the number of female visitors is consistently higher, comprising 60% of visitors from 2015 to 2017.

Notwithstanding their differences, several common factors underpin these visitor types:

- Motivated to learn and engage in a recreational context;
- Placing value on social interaction and orientation within a learning space;
- Drawing upon prior knowledge or experiences to forge connections with the past; and
- Attracted to concrete and informative, yet also engaging and interactive displays.

A considerable proportion of the Buderim Pioneer Cottage's current visitor demographic comprises young primary school-aged children, the majority of whose visits are conducted as part of a pre-organised educational program. This is not surprising given the high number of educational institutions in the LGA surrounding the Buderim Pioneer Cottage, including 40 State primary schools, 7 private schools, and 16 independent schools. In addition, the University of the Sunshine Coast is located near Buderim at Sippy Downs.

Given its location, the reinterpretation of the Buderim Pioneer Cottage site thus presents a unique opportunity to share its layered local history and diverse heritage values with broad audience. There is the capacity for the Buderim Historical Society to strengthen the identity of the Pioneer Cottage as a cultural focal point for the residents, businesses, and communities in Buderim and more broadly, in the Sunshine Coast Region.

Specifically, the Buderim Pioneer Cottage has the potential to expand its educational outreach programs to:

(a) Offer more diverse learning experiences;

(b) Reach a broader demographic encompassing late primary, high school and tertiary students; and

(c) More directly align with the three interrelated strands fundamental to the Australian Curriculum - historical knowledge, historical understanding, and historical skills - in ways that are engaging and appropriate to local contexts (Figure 2 on page 15).

Year 3
Exploring diversity of people and places in local communities, including the Country of Aboriginal and Torres Strait Islander Peoples, and other communities
Comparing the climates, settlement patterns and population characteristics of places, and how these affect communities, past and present
Identifying individuals, events and aspects of the past that have significance in the present, including changes and continuity over time
Conducting historical research by posing questions about the past and locating or collecting information from a range of historical sources
Year 5
Examine different viewpoints on actions, events, issues and phenomena in the past and present
The environmental and human influences on the location and characteristics of a place and the management of spaces within them
Locate information related to inquiry questions in a range of sources
Develop texts, particularly narratives and descriptions, which incorporate source materials
Exploring the nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of the inhabitants (including Aboriginal Peoples and Torres Strait Islander Peoples) and how the environment changed
Year 7
Exploring the influence of social connectedness and community identity on a place
Identify and describe points of view, attitudes and values in primary and secondary sources
Locate, compare, select and use information from a range of sources as evidence
Year 9
Investigating living and working conditions in Australia around the turn of the twentieth century
Studying the experiences of slaves, convicts and free settlers upon departure, their journey abroad, and their reactions on arrival, including the Australian experience
Developing historical understanding through the investigation of key concepts, including evidence, continuity and change, cause and effect, perspectives, significance and contestability
Studying the nature and extent of the movement of peoples in the early colonial period of Australia, including the experiences of slaves, convicts and settlers
Processing and synthesising information from a range of sources for use as evidence in an historical argument

Figure 2. A selection of History and Geography Achievement Standards applicable to the history and study of the Buderim Pioneer Cottage.

The Visitor Experience

As noted in the MAGSQ Standards Review (2017:5), the visitor experience of the Buderim Pioneer Cottage is orientated around the authenticity of the building and the site itself, which collectively enable visitors to "go back in time to understand how the Burnett family lived in the late 19th century" through the reveal of "rich layers of family life and Buderim history". Therefore, with the original Burnett residence forming an integral part of the museum environment, the Buderim Historical Society's current focus on its historical collection housed within the Cottage as a means of engaging visitors' is appropriate.

The Pioneer Cottage is a well-kept building set in a mature garden with an original timber slab building in the rear of the grounds. The visitor experience is currently defined by its displays of authentic historical collections relating to its original owners and tenants, the Burnett family, which are dispersed throughout the two-storey house and grounds. The presentation of themed displays with vignette scenes are a particular point of interest for visitors, creating an evocative experience of the Burnett house during the late 19th to early 20th century. Although many items lack specific regional provenance, their presence in the house is currently rationalised as a necessary part of the themed vignette scenes indicative of early Buderim life.

In summary, the Pioneer Cottage utilises the following methods of interpretation:

Exhibits
- Historic room settings (vignettes)
- Object labels
- Layered sources of textual information (labels, binders, brochures)
- Photographs

Personal Interpretation
- Guided tours (volunteer-led)

Extension
- Website

Strengths, Challenges and Opportunities

Through a review of the current operational practices and existing strategic documentation for the Buderim Historical Society and Pioneer Cottage, the following strengths, challenges, and opportunities are identified:

Strengths	• Low admission cost • Dedicated volunteer team • Substantial historical collections connected to local stories, places and people • Location in original pioneer cottage with mature garden and period outbuildings • Use of vignette scenes to evoke early life in Buderim • Historical resources available for public use
Challenges	• Availability of display and storage space • Conservation of historical collection and upkeep of pioneer-era buildings • Lack of diverse and modern display media • Community engagement with collection management • Engagement with visitors of diverse ages and interests • Identity of Pioneer Cottage as heritage resource, including brand marketing • Diversify volunteer base
Opportunities	• Reaffirm identity of Buderim Pioneer Cottage • Establish a more thematic exhibition framework with a clear interpretive strategy • Integrate interactive media content • Foster consistent community and research partnerships • Establish curriculum-linked school and educational programs • Conduct targeted visitor research

Strengths

The Buderim Pioneer Cottage presently has a well-established collection, together with vastly improved storage facilities for a range of objects and archives. The volunteer-led team have taken proactive steps towards improving the management of their collection, including the completion of a MAGSQ Standards Review (2017), a Significance Assessment (2017), a Strategic Plan (2013-2018) and a Collections Policy (2002). The completion of a significance assessment will assist with future decision making and a successful grant application to allow a Preservation Needs Assessment will further contribute to professional maintenance of their collection.

The Pioneer Cottage building is another key feature: it is one of the oldest surviving residences on the plateau and as it has remained substantially intact, it is of excellent value in terms of demonstrating the principal characteristics of an early 1880s house built of local timbers. The

rustic materials and simple form of the building, set within the mature garden, have an aesthetic quality valued by the local Buderim community.

Opportunities

Arguably one of the most significant components of the Buderim Pioneer Collection is the archival collection, for its ability to support research relating to historical aspects of Buderim. This collection is comparably small; however, many items are unique primary sources with a high historic research potential. Of particular note are the Buderim Progress Association minute books (1924-39) and the photographic collection capturing the pioneer-era activities, structures and landscapes of the Sunshine Coast Region. Given that this photographic collection lends itself to digitisation, it is also likely to be a key resource for future exhibition development. However, the potential of Buderim Pioneer Cottage as an accessible resource of local history - for visitors, historians and heritage professionals - is yet to be harnessed.

Another major growth area for the Buderim Pioneer Cottage is the realisation of its objective to act as a community resource for youth education, particularly in local history. The proposed development of a new interpretive strategy for the Cottage underpinned by a thematic and interactive sequence of display is a clear opportunity to establish (in tandem) a series of educational activities and/or programs with explicit curriculum connections. There is a need to move beyond the existing programming to address new target audiences and strengthen partnerships with local schools and educators.

Challenges

The essential challenge facing the Buderim Historical Society is how to ensure that the Pioneer Cottage and its collection remains relevant to values and expectations of the contemporary Buderim community.

While the preservation of the Cottage itself (and the historic house-style of presentation) is certainly an asset for the Buderim Historical Society, the current state of interpretation does not sufficiently meet the needs of different visitors, nor allow the parallel stories of both the Burnett house and Buderim to be effectively (and equally) transmitted. Take, for example, the current use of the ‘Museum Room’ as the primary interpretation space for addressing both of these narratives (with comparatively minimal interpretation in the rest of the house).

In addition, the provenance of the collection is varied in its application. While the histories of many individual items, especially those relative to the Burnett family, are well understood and documented, there are conversely a number of items acknowledged to have limited or no local provenance on display in the Cottage. Moving forward, the selection of collection objects warrants prioritising within a thematic interpretive strategy as currently, the display at times has the effect of obscuring the context of key items within the local Buderim ‘story’.

Interpretative Objectives

The MAGSQ Standards Review (2017) of Buderim Pioneer Cottage prioritised the development of a new interpretation and display approach for the historical collection. Specifically, the objective is to establish a balance between the authentic collection related to the history of the Pioneer Cottage itself and the re-telling of the local social history of Buderim.

This new interpretation strategy is broadly grounded in the following objectives:

- Capitalise on the significant stories and items inherent in the Pioneer Cottage collection
- Engage new audiences and attract return visitors
- Promote the unique image of the Pioneer Cottage as a 'living piece of history'
- Refine the orientation to and visitor experience of the Cottage
- Improve the accessibility and interactivity of the collection
- Co-ordinate thematic 'stages' of information and rationalise a sequence of display that works to build a historical understanding for visitors not intimately familiar with Buderim

Interpretative Principles

In today's society, people have many opportunities in which to invest their time and money. Moreover, visitors to heritage sites and museums are tasked with appealing to a range of different audiences, with different levels of experience, knowledge and learning styles. Therefore, a site such as the Buderim Pioneer Cottage can only attract a broad and supportive audience by striving to provide their visitors with value in the form of *engaging*, *informative* and *relevant* experiences.

Good interpretation is based on a detailed knowledge of the needs and desires of the audience(s), as well as an understanding of the significance of the site and sound communication skills. One of the key theories is the work of Sam Ham (2016), who identifies four basic principles for developing effective interpretation:

Thematic Organised Relevant Entertaining

The TORE model states that effective communication is not achieved by presenting general facts and figures in order to get audiences thinking logically and rationally. Rather, it is by presenting a message that provokes these audiences into 'thinking', both critically and emotionally (Ham 2016). While the TORE principles are all interrelated – if something is

organised and relevant, it is thus more likely to be entertaining (and vice versa) - it is important to consider each in isolation.

Thematic
Interpretation must move beyond the communication of factual information to convey a compelling, central message.

A theme is essentially 'a big picture idea' - a concept or belief that forms the point of an interpretation. Or put simply, what do you want visitors to know? Why it is important to know? In a thematic framework of interpretation, visitors can easily organise relevant facts, concepts and items around a central, compelling message that works to place a given history in a meaningful context. Devising and adopting a series of themes therefore enables the communication of historical information in an organised, yet memorable fashion to a general audience. Without a thematic approach to interpretation, visitors often become 'lost', grappling with a large volume of unconnected facts that cannot be easily threaded together to form a larger picture.

Organised
Interpretation must create a 'path' that is easy for the visitor to follow.

This principle refers to the way that information is not just communicated, but also presented. There should be a logical progression of connections between the central themes and the facts presented to support those particular themes. Organised interpretation means that visitors are positioned to arrange basic information into a meaningful body of knowledge about which they can think actively - during and beyond their visit. Above all, visitors should feel confident in where they are and where they are going within a given space. This realisation comes from the organisation of historical content in a logical, but more importantly, in a thematic fashion.

Relevant
Interpretation must make connections with the visitor's knowledge, interests and experience.

Most interpretation at historic sites focus on imparting historical 'facts' and therefore, a visitor's instinct is to relate historical information or stories to 'the past'. However, it is clear that many visitors are just as interested in the connections a particular history has to their own lives. For the communication (and recall) of information to be effective, it must therefore be relevant with opportunities to create both *meaningful* and *personal* connections. Meaningful interpretation is when visitors are able to *connect* new information/ideas with their existing knowledge or experience. Personal interpretation is when visitors are given a valid reason to *care* about a past place, person or story.

Entertaining
Interpretation must strive to hold the visitor's attention in a pleasurable, stimulating manner.

Visitors choose to spend their recreational time visiting heritage places with the competing expectations that they will learn something, but also enjoy themselves in the process. This principle therefore refers to the ways in which serious ideas and factual information can be best

communicated to ensure that a visitor's learning experience is both enjoyable and informative. Entertaining communication is informal and conversational in tone: it uses the active voice, metaphors, anecdotes, analogies and other strategies to clarify facts, events and relationships. Most importantly, it should strive to be friendly and participatory.

This Interpretation Plan proposes that the Buderim Pioneer Cottage develop a new approach to its current display based on a combination of the above four principles, aligning with Ham's TORE theoretical framework. If adopted on site, this new approach to interpretation will necessitate the re-organisation and re-focusing of each display 'space' available within the Pioneer Cottage, surrounding garden and adjacent outbuilding.

In addition, the interpretation of the Buderim Pioneer Cottage should be undertaken with primary regard to the significance of the site as an early surviving example of a pioneer-era residence. All programs and initiatives should strive to minimise adverse impacts on the significant built fabric of the Pioneer Cottage: for example, the introduction of purpose-built interpretive elements should be kept to a minimum. Finally, the interpretive approach will extent beyond the site of the Pioneer Cottage, seeking to provide a more nuanced understanding of the place in its historical, geographical and social context.

Interpretative Themes

The significance of the Buderim Pioneer Cottage is multi-faceted and (as is often the case with heritage places), it is impracticable to communicate every facet of this significance to a visitor. However, two interconnected themes are consistently prominent. The first is that of the history of the Pioneer Cottage and inhabitants, the Burnett family. The second is the history of Buderim and its immediate localities. In addition, the Significance Assessment (2017) of the Buderim Pioneer Cottage thus far contains a series of comparisons between key collection items and/or topics and the historic Queensland themes identified in Blake's (2000) publication, *Queensland's Cultural heritage – A Thematic Perspective for the Queensland Museum.*

It is not the intention of this document to contest these core themes, which have provided a solid framework for the analysing the significance of the Cottage' historical collection. However, as part of the proposed development of a new interpretive framework for the Pioneer Cottage that subscribes to the aforementioned TORE principles, it is imperative to revisit the existing group of historic themes (and if necessary, expand and revise).

It is important to note that this process must move beyond identifying historical topics relating to the collection or the Buderim area: rather, the purpose of using themes as the foundation of interpretation is to create a series of interconnected beliefs and concepts that will help visitors trace how the Pioneer Cottage fits into the patterns of social and cultural development in early Queensland society.

Interpretative Methods

If interpretive themes determine which stories the museum should be telling (and why), then the next stage is to determine which interpretive methods will best give life to these stories. Done well, heritage interpretation can enhance the visitor experience. It may also strengthen the relationship between the site, its visitors and those who live around it. The chosen media must strive to match the needs and nature of the various audiences and above all, be compatible with the conservation values of the site.

Traditionally, interpretation in a museum space relies upon print and text-based media. Without discounting the immense value of these traditional approaches, it is also imperative for museums and heritage sites to strive to stimulate learning and enjoyment through a wider range of learning experiences if they hope to engage with cross-generational audiences. Digital media is effective in the sense that it facilitates many kinds of collaboration – between the museum and the visitor; between the museum and the wider community; between different learning institutions; and finally, among visitors themselves.

For the Buderim Pioneer Cottage, the *selective* application of digital technologies enables a number of possibilities beyond simply providing an alternative format for processing or viewing information. Fundamentally, it will assist with the preservation of rare and/or fragile collection items by preserving the original and providing access to a high quality digital surrogate. However, more importantly, the creation of digital content (be it strictly audio, visual or a combination of both) will also enable the delivery of a more sensory and interactive learning experience. Providing visitors with access to information in different (not just text based) forms will enable access to previously unaccessible content, facilitate the generation of new content and also allow for the transition of that content throughout the wider community.

4. INTERPRETATION

Heritage Objective 1: Define a Mission and Vision

Objective:

Review existing Mission and Vision statements

Details:

A museum's mission statement is a reflection of the institution's reason for existence. It serves as a foundation for its long-term policies and therefore, it is must fulfil a dual purpose: articulate the museum's core values, yet equally identify with its future goals.

As defined in the current Strategic Plan (2013-2018), the Buderim Historical Society maintains the following Vision and Mission statements:

> *Vision: To keep Buderim's history alive through conserving and preserving its past.*
>
> *Mission: To conserve and preserve Buderim pioneer history, artefacts and data for utilisation by our community and visitors.*

While the Buderim Pioneer Cottage is already a valued repository for the history of Buderim, these guiding statements warrant revisiting (and if necessary, updating) to ensure that the future direction of the Buderim Historical Society aligns with:

a) The future direction of the collection and its associated policy;
b) The proposed reinterpretation of the Pioneer Cottage;
c) The development of new formal and informal learning experiences; and
d) The establishment of new marketing and community program initiatives.

Heritage Objective 2: Target Appropriate Audiences

Objectives:

Identify avenues for increasing the accessibility of the collection

Identify avenues for increasing and/or communicating the appeal of the visitor experience

Conduct targeted demographic research to inform the development of new curriculum and/or age specific educational content

Establish a process of visitor evaluation

Details:

Audience research and feedback is essential for developing relevant and effective heritage interpretation. Foremost, it allows for a greater understanding of the immediate needs and expectations of the existing and potential visitor bases. But importantly, it also helps to promote long-term visitor engagement by informing programming initiatives and funding applications.

A formal evaluation of how (and why) visitors respond to the Buderim Pioneer Cottage is crucial to the proposed reinterpretation of the Cottage's permanent historical displays. With a long-term view to cultivate greater public investment in the history and memory of Buderim, it is paramount that the Buderim Historical Society invest in more targeted audience demographic research and in turn, identify effective avenues for visitor engagement.

This audience demographic resource would involve identifying the expectations; physical requirements; and cultural, demographic and behavioural characteristics of both existing and potential visitor groups. It would be informed by the existing visitor research conducted by Buderim Historical Society, which provides a useful point of reference in terms of indicating ongoing visitor trends or major inconsistencies.

In addition, the BHS volunteer guides currently represent a valuable, yet untapped source of information regarding visitor behaviour. A formal process of visitor evaluation and audience research would also seek to translate this anecdotal information into qualitative data.

Heritage Objective 3: Establish Interpretative Themes

Objectives:

Refine the assessment of potential themes identified in the 2017 Significance Assessment

Establish a new series of thematic concepts

Support the development of a display space that tells an engaging, unified story with clearly identifiable messages and learning objectives

Details:

The reinterpretation and rejuvenation of the Buderim Pioneer Cottage's permanent display space is first dependent on the establishment of a new series of thematic statements.

Currently, the 2017 Standards Review identified the following topics as a means of prioritising objects for display:

- Indigenous history
- Burnett Family
- Life in Buderim (including leisure; agriculture / industry; and settlement)
- Pioneer Cottage (including its development and the Sybil Vise story)

Whilst these topics are certainly aligned with the focal points of the historical collection, they are too generalised to function as an effective guideline for the future reinterpretation of the museum space. If the Buderim Pioneer Cottage is to truly develop a cohesive and engaging visitor experience, its interpretive framework must move beyond historical 'topics' to historical 'themes'.

This will necessitate the development of a new series of thematic statements, each of which communicate a specific message or a point of view in relation to a particular historical event, narrative or figure. These thematic statements will serve to guide future interpretation and design decisions by suggesting particular informational angles or historical objects to be communicated as part of the visitor experience.

The development of this new series of thematic statement for the Buderim Pioneer Cottage will be informed by the framework endorsed in the following document: *Historic Themes in Queensland - Understanding Queensland's Cultural Heritage* (2001). It is also recommended that as part of this development, the BHS moves forward with the recommendations outlined in the 2017 Significance Assessment, namely the completion of individual significance assessments of key items within the historical collection.

Heritage Objective 4: Develop an Exhibition Strategy

Objectives:

Review (and if necessary update) the existing Collections Policy

Establish a thematic interpretive framework grounded in the TORE principles

Develop a rationalisation for objects to be placed on permanent vs. rotating/temporary display

Establish a strategy for decluttering the Pioneer Cottage displays

Draw upon current audience demographic research

Create a style guide for all future interpretation delivery

Details:

Rather to be broadly relevant, the new interpretive strategy for the Buderim Pioneer Cottage interpretation should seek to provide opportunities for emotional and intellectual connections with the history and memory of Buderim. This interpretive approach should support:

- Participatory and memorable exhibits that educate and engage;
- Diverse visitor types;
- Formal and informal learning experiences;
- Access to the permanent historical and archival collections;
- Temporary exhibits;
- A variety of interpretation methods and/or media; and
- The opportunities and constraints of the physical space.

This process of reinterpreting or ‘recasting’ the Buderim Pioneer Cottage’s displays is not strictly about developing a new exhibition design. It involves an in-depth evaluation of how visitors might experience the place (in all its elements) and subsequently, a carefully-researched rationalisation of the type and location of objects on display. This will be achieved through the application of a thematic framework, consisting of a new series of interconnected messages or ‘storylines’ (see Heritage Objective 3). As such, the furnishings and collection items on display in each room must contribute to the overall ‘story’ or theme of that space. In time, this approach will not only serve to reduce clutter and aesthetically update the display space, but also enable the creation of clearer historical accounts for visitors not intimately familiar with the house’s history.

Heritage Objective 5: Introduce Media Content

Objectives:

Identify avenues to broaden access to the historical and archival collections

Supplement and enhance existing displays with audio-visual technologies

Facilitate the development of new volunteer opportunities

Establish a marketing plan for website and social media

Details:

This Interpretation Plan recognises the reality that for many visitors to the Buderim Pioneer Cottage, the volunteer-led orientation tour is the core component of their experience. Further to this, however, it is imperative that the BHS invests in additional interpretive methods and media to enhance the visitor experience across age, background and learning styles. In addition, it is important that the BHS invests in the development of a strategic marketing plan encompassing existing and new online platforms, particularly if the aim is to engage with a wider range of audience types and establish research partnerships.

The delivery of new interpretive media should aim to enhance the existing object displays and scenes of historic life (vignettes), as well as support the long-term accessibility of the collection. This might include (but is not limited to):

- Interpretive signage
- Incidental interpretation
- Interactive digital viewing stations
- Audio-visual presentations
- ‘Living history’ performances
- Soundbites and/or soundscapes
- Digital archives (eHive)

Heritage Objective 6: Foster Partnerships and Programs

Objectives:

Identify avenues for increasing public investment and interest in the Buderim Pioneer Cottage

Advocate increased community involvement in the activities of the BHS

Revise (and if necessary, establish new) educational and community initiative programs

Foster community stewardship of local heritage and stories

Strengthen the museum's reputation as a heritage resource

Details:

The reinterpretation of the Pioneer Cottage will serve to make its significant cultural history and heritage values more engaging and accessible, which presents a specific opportunity to improve the public image and role of the Buderim Pioneer Cottage in both the local Buderim community and the broader Sunshine Coast Region.

Part of this process of developing partnerships and programming will include the review of the BHS' existing community initiatives. More importantly, however, it will also involve the development of new partnerships and/or programs designed to support the longevity of the Buderim Pioneer Cottage and encourage community engagement with its unique history.

This might include (but is not limited to) the following:

- Flexible educational program for visiting school groups of various ages and/or needs
- Short-term research or volunteer placements suitable for emerging museum professionals
- Incentives for supporting local businesses and/or artists
- Photography or traditional skills workshops
- Venue hire fees for special events
- 'Living History' events
- Student research awards in partnership with local businesses and newspapers
- Youth volunteer program involving collection management and temporary exhibitions
- Partnership with BWMCG
- Connections with external sites (eg. Foote Park)

5. DELIVERY

This Interpretation Plan is intended to guide the interpretation of the Buderim Pioneer Cottage, refined by evaluation and periodic review, for the next five years. It will be reviewed in 2023.

Evaluation will take the form of consultations between heritage professionals, the BHS and BPC staff and volunteers, and members of the local Buderim community. A revised version should be developed if this plan is no longer seen as relevant and capable of guiding the museum in achieving its interpretive goals.

The relevant projects, timing and estimated costing associated with each of the aforementioned heritage objectives are itemised in separate document ‘Buderim Pioneer Cottage Heritage Objectives Schedule 2018 Stage 1’ dated June 2018.

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Appendix K – Buderim Pioneer Cottage Preservation Needs Assessment Action Plan

BUDERIM PIONEER COTTAGE

Preservation Needs Assessment

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Objects Conservator

Date: June 2018

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CONTENTS

3. Executive Summary

The Pioneer Cottage Buderim aims to promote and develop interest in the early history of Buderim, Pioneer Cottage and the JK Burnett family and their associated lifestyle and culture, as experienced during the period 1882 - 1950. The Mission of the Buderim Historic Society as listed in its Strategic Plan is:-

"to conserve and preserve Buderim and local pioneer history, artefacts and data, as a background resource to modern regional development and lifestyles."
- Buderim Historic Society Strategic Plan, 2017

The Museum is currently maintained and operated by the Buderim Historical Society Inc. (BHS), a committed group of 26 volunteers. The BHS has been operating since 1966. It initially formed as a group with a focus on the repair and restoration of the John Kerle Burnett cottage, as the cottage had fallen into a state of dilapidation and disrepair. The BHS was formed when the cottage was donated to the Buderim War Memorial Community Association (BWMCA) by Sybil Vise, who was the last owner and resident of the cottage. In 2000 Sybil Vise, also bequeathed the Sybil Vise House to BWMCA on the condition that the cottage was not to be sold, and was to be used for research into the history of Buderim. Some collection items are original to the JK Burnett family, but many have been donated by the wider local Buderim community and primarily represent the time period 1872-1950. The focus of the BHS is the preservation, display and interpretation of the cottage and its associated collection materials; plus associated maintenance; collection management, documentation and research activities.

The cottage is located near the centre of Buderim at 5 Ballinger Crescent. The collection is housed in the original cottage, the Slab Outbuilding Tool Shed, Sybil Vise House, and the adjoining built-in Garage. There is also a newly constructed toilet block built on the site in 2017. The collection is a significant source of information and a repository of the Buderim region and pioneer era of settlement, as well as the JK Burnett family history. It is yet to reach its full potential due to space restrictions and lack of resources.

Four major recommendations are made following assessment of this collection, they are:

1. Investigate options to increase storage space and create a designated Conservation/collection handling space. This would alleviate the current cramped conditions that are placing collection items at risk.
2. Implementation of preventive conservation practises for at risk collection items, including continuing with current preservation housekeeping practises, implementation of an Integrated Pest Management plan (IPM), and behavioural change to reduce light levels.
3. Relocate, rotate, and reduce the number of sensitive collection items on display in areas with damaging display conditions; and upgrade display materials.
4. Develop a policy for the conservation treatment of actively deteriorating items.

Key issues required to carry out the recommendations include:

- Continue to de-accession unrelated materials to free up extra storage space.

- Consider all options to create more space. A short term and comparatively low cost option proposed by volunteer David Woods was to install storage compactus' inside existing storage areas to make better use of available space. A larger scale option would be to seek funding for the proposed building extension to Vise House. Another option would be to investigate the availability and seek funding to rent any nearby storage rooms and work space facilities that may be available off site. A fourth option could be to seek funding so that the meeting room area and Buderim Foundation office no longer need to be rented out, and could be permanently used as a collections/ conservation area (however this option is much less appealing as it would significantly diminish the social and community function of Vise House).
- Attracting more volunteers.
- Assistance from a Conservator to train a wider group of volunteers by using an "in house" and "on the job" approach; rather than through "one off" visits and training events.
- Focus current volunteer activities on upgrading the display of the small object collection with archival materials and techniques.
- Identify and rehouse "at risk "significant objects of sensitive materials types. This includes rotating the most sensitive collection items, and rehousing deteriorating and sensitive collection items stored in location such as the attic, outdoors, and in the outbuilding.
- Behavioural change in drawing the blinds so that light levels are reduced to safe levels.
- Reduce the amount of sensitive collection materials on display (particularly textiles) and rotate light sensitive collection items frequently to reduce cumulative light damage.
- The current housekeeping practises in the cottage are excellent, these should be continued. A few minor areas in difficult to reach places also need attention.
- Implement an Integrated Pest Management (IPM) program.
- Funds for training to promote a cultural change in the approach to restoration work habits.
- Funds for a Conservator to undertake the conservation treatment of deteriorating collection items.

4. Key recommendations

The summary of further key/major recommendations for further action are categorised as either short term: within 12 months, medium term: within 3 years, or long term: within 5 years.

Short term recommendations:

- Continue to implement thorough cleaning and ordering of storage and display areas, particularly cleaning in hard to reach places.
- Remove moss, algae and biological growth from timber shed using a quaternary ammonium compound such as Alginox.
- Apply a timber preservative to the timber shed, exterior timbers, and timber objects stored outdoors.
- Decrease the amount of textiles on display in high light areas, and rotate all textiles on display.
- Address high light levels issues in Pioneer Cottage Buderim and keep all existing blinds drawn when light levels are high during the daytime to reduce light levels, particularly in areas with a lot of textile and other susceptible collection materials.
- Keep plan drawers containing textiles closed when not in use.
- Keep all outside doors closed and use door snakes to block the gaps beneath doors. If extra air circulation is necessary, use pedestal fans. (Open doors are an access point for insects, and dusts).
- With the assistance of a Conservator, identify and remove any historically significant objects that are temperature and RH susceptible from the poorly insulated attic area, and replace with props, or objects of less susceptible materials types.
- Continue to monitor and investigate the roof leak in the dining room and the previous leak site around the dormer windows in the upstairs attic.
- Upgrade storage condition of textiles in the plan drawer cabinets in the cottage built in Verandah. Enlarge Mylar covers when necessary, so that textiles are fully covered at all edges. Reposition and flatten any textiles that are crumpled or folded over.
- Remove incompatible metal polishes and cleaning materials from the storage areas.

- Implement a policy of no food, drink, flowers or live plant materials inside Pioneer Cottage Buderim and Vise House storage and collection handling areas as these attract pests.
- Use the existing door snakes and make sure they are replaced at end of each day.
- Inspect the contents of all boxes inside the garage storage area following the pest infestation of feather fans that were stored here.
- Freeze or undertake anoxic treatment of any items showing recent insect activity.
- Undertake a volunteer membership drive.
- Seal pest ingress areas of the building (particularly in the kitchen).
- Complete current project to remove the Ensign flag from the wall and rehouse it in lower light conditions in a drawer beneath the display table in built in verandah.
- Safely remove any remaining old insect deterrent jars in drawers and corners, and remove Japanese tissue paper strips that have been pasted over borer holes in the attic.
- Transfer more significant items to better storage conditions.
- Rotate the display of textiles, particularly those in the built-in verandah along the external wall.
- Remove the most vulnerable class of materials (such as hair, textiles and paper), and assess the significance of the textiles and paper currently stored in the attic. Remove any significant items to more climate stable location.
- Iron objects stored outdoors are heavily corroding and perishing, particularly the cast iron pot beneath the water pump which has been destroyed by water pooling in its base. These items should be moved to a more sheltered storage environment.

<u>Medium term recommendations:</u>

- Implement an Integrated Pest Management Program, including placement and regular checking of sticky blunder traps to monitor pest activity in display and storage areas. (particularly in the location of the feather fan infestation)
- Install blinds on kitchen windows, lounge room, bedroom,
- With the assistance of a conservator, survey the materials used for storage and display inside the cottage, and upgrade the storage and display conditions of items using archival materials.
- Relocate or upgrade storage for items in cabinets, drawers, shelves, and open display throughout the cottage.

- Rehouse vulnerable materials types such as wood and leather objects in the slab outbuilding. The should be relocated to a storage location with a more stable climate.
- Review work practices in line with conservation standards and nominate persons to be in charge of different work areas. Produce a brief induction overview for volunteers outlining the conservation policies.
- Conduct an OHS audit to remove any hazardous materials, such as old pesticide, chemical and medicine containers in the kitchen and laundry display.
- Reduce the number of objects on display. This would have the benefit of resting objects made of more susceptible materials types, as well as aid in the interpretation of the collection
- Provide more conservation training for volunteers that are involved in conservation, collection storage, display and handling activities. As training workshops are usually only attended by the same couple of volunteers, this could be more effectively implemented by having a conservator work alongside and demonstrate to volunteers, so that key collection processes can be advised on and audited via a hands on learning approach.
- Repair previously termite affected attic walls with new timber of the same species.
- Construct supports for prone objects and replace and upgrade incompatible support and display materials.
- Take a conservation rather than a restoration approach to object treatment; and review work practises in line with conservation standards.
- Develop a Conservation Policy relating to the care and restoration of farming implements and objects, and have it adopted by the BHS. By implementing this policy the BHS can then be confident of restoration work that retains the cultural and heritage significance of the collection objects.
- Deep clean behind and underneath furniture, and in cracks and crevices
- Source and provide training for extra Curatorial Team volunteers in database use and conservation storage and display methods.
- Continue to develop and implement a cleaning schedule for all building areas.
- Install blinds in the remaining cottage display areas – living room bathroom, and bedroom.
- Upgrade storage of damaged objects such as the broken picture frames and glass painting in front room and leather objects in the outbuilding.

- Further investigate and identify the provenance of aboriginal and Pacific Islander objects.
- Dispose of any remaining inappropriate cleaning materials and clean wood, leather, and metals using conservation recommendations;
- Identify an interim functional offsite space for conservation and collection activities and storing conservation materials.
- Treatment of damaged “A list” collection items, such as the painted glass artwork depicting flowers
- Remove original paper based objects from display, make copies and display replicas.
- Engage a Conservator to remove the silver coloured paint coating on rusted tools in the shed, stabilise the corroded metal beneath the paint, and train volunteers in the treatment of corroded metals.
- create and display copies of original photographs and paper based works;
- inspect textiles in storage and treat any garments affected by insect pests;

Long term recommendations:

- Obtain a chest freezer to treat pest affected items.
- Deframe paper based items housed in acidic frames
- Standardise the presentation of labelling and information panels
- Construction of a new Storage and Display facility to alleviate severe space restrictions.

5. Policies

Conservation Management Plan

The 2017 Standards Review report identified the need for a Conservation Management plan to ensure the long term care of the heritage listed building. A CMP would outline museum collection best practice. Some volunteers have been trained in cataloguing the collection into the new database system, and many objects have now been catalogued.

Collections Policy

The BHS has a Museum Collection Policy which gives a broad overview of procedures and covers acquisition, maintenance and storage, documentation, inward and outward loans and de-accessioning.

The ad-hoc collecting of new items has recently been curtailed and a more specific approach to collection is now being implemented. Collection is more restricted to identified themes, and objects of particular relevance are being tracked down or advertised for. Deaccessioning is now being proactively instigated.

Storage space is very limited and the three storage rooms are very full. Storage space is so limited that the toilet in Vise house has even been used for storage. Deaccessioning items that do not fit identified curatorial themes will greatly assist in freeing up storage space.

Disaster Plan

Pioneer Cottage Buderim has a comprehensive Disaster Plan and Volunteers have undergone training in disaster preparedness. BHS has a set of 5 disaster bins in case of an emergency. At risk and priority collection items have been identified by name and photograph.

Significance Assessment

The Significant assessment was carried out by Josh Tarrant in 2017 and this document has been a catalyst for change at Pioneer Cottage Buderim. Volunteers have welcomed the information in this report and have been proactive in implementing the recommendations outlined in the Significance Assessment.

Conservation Treatment Policy

The volunteers of the BHS are proactive and enthusiastic and are to be congratulated on the success and public interest generated in local heritage and the JK Burnett family history through their operations. As the long term goal of the BHS is to further consolidate the interpretation of the site and the history of Buderim pioneer heritage, it would be prudent to reassess the restoration work being performed in terms of the conservation practices promoted by the Australian Institute for the Conservation of Cultural Materials (AICCM) and the Burra Charter.

The BHS does not have a written Conservation Treatment Policy for work on heritage objects. It is not always clear if conservation/restoration plans and decisions are decided prior to the commencement of work. This is vital and allows the workers to proceed with confidence that the finished product will be faithful to historic intent. Tools, materials and restoration techniques can be discussed with the Volunteer Committee and agreed to

in advance, rather than decisions being made on the workshop floor. This will help with planning and ensuring that the final outcome reflects the history of the object. Embellishment of objects should be kept to a minimum so as to maintain historical accuracy.

Some areas where a revision of the current practices should be reviewed include ensuring records, photos, treatment and condition reports are made before, during, and after restoration, and that these follow a standardised format.

Some guidelines for conservation work that have been drawn from the Burra Charter include:

- Do not alter the final appearance of an object unless absolutely essential. i.e. keep to correct materials and fasteners.
- Keep records of what works have been done, especially if any work results in alteration. If parts are removed or scrapped due to wear etc., they should be stored as archives for reference in the future.
- It is not only the objects that are being conserved but their technology. If something is added to the object to strengthen it, or make a change to the way it operates, it is important to make sure it can be differentiated as such in the future.
- Keep all work faithful to the object's history and cause.
  (Doubleday, W, 2002, p 14-15).

Recommendation:
Develop and implement a Conservation Treatment Policy for the conservation and restoration of BHS objects.

6. Collection, Storage and Display

The collection contains a large variety of materials ranging from composite large technology objects, metals, textiles, paper based materials, paintings, audio visual materials, ceramics, glass, ethnographic objects, wood, leather, and plastics. The collection consists of approximately 5400 items, and is mostly in fair to excellent condition, although there are a number of fragile and poor condition items (mostly tools, textiles and paper based materials) that are in need of treatment or better storage /display conditions.

The Volunteers have a good awareness of the preservation and conservation needs of the collection and the factors that contribute to collection deterioration. They are proactive and over the years have updated their knowledge by attending training courses and actively researching museum best practise. Volunteers have made many archival storage containers and used archival materials to support and package objects; and have routinely worked through most objects being stored. This has led to an improvement in storage facilities and conditions, despite the significant limitations in storage space.

The collection follows the clearly identified curatorial themes of BPC and the JK Burnett family history; plus artefacts related to Buderim and its residents.

"The collection policy outlined in the Collection Policy guidelines specifies a range of themes and object focuses, including:
1. Items of significant historic value owned and used by a resident of Buderim

2. Everyday items of the period which show the technological development which enhanced living and working conditions especially in the home

3. Lace, linen, embroidered items and handmade clothing, especially children's

4. Household items which record the ingenuity of people during hard times

5. Memorabilia of the war time

6. Photographs, post cards, newspaper cuttings, articles and letters which describe Buderim, its citizens and activities

The time period particularly focused on is c.1876 to c.1950, although there is a concession for the contemporary collecting of paper-based items, ephemera and photographic works beyond this period." (Tarrant, J 2017, p7, 8)

The collection is displayed in BPC according to clearly themed areas that mostly reflect the original use of each room/ area of the house and its surrounds. The Vise House building is primarily used for collection storage, office space, and as a meeting room. Collection materials stored at Vise house are roughly grouped according to materials type.

Storage space is extremely limited, to the extent that spare space inside the toilet is used to house storage cabinets. Despite the limitations of the site, significant effort has been

made to cater to conservation principles when designing the storage and display systems, and materials used for the collection storage is mostly appropriate archival quality materials. Some small refinements would help to enhance and perfect storage practises.

Objects and garments not used for display are stored in small store rooms, cupboards, drawers, solander boxes and containers, protecting them from temperature and RH extremes, dust, and high light levels. All storage areas have extremely low to no light. Emphasis is given to caring for the most significant collection items. Storage of some collection items could be improved. Most of the collection is currently on display, and most collection items are rarely accessed, except for cataloguing purposes or storage upgrade activities carried out by the by Volunteers group. A list of suitable and unsuitable storage materials is attached as **Appendix.1**.

The Collection can be broadly divided into seven categories:

- Objects (including JK Burnett Family related objects, South Seal Islander Artifacts, Buderim Pioneer heritage related objects)
- Tools and outdoor industrial equipment (including farm, timber, mining, sugar industry related)
- Textiles and Costume
- Library
- Oral History and Lecture Series (including audiovisual materials)
- Paper based and Archival (including scrapbooks and newspaper clippings, documents relating to Buderim Progress association, historical records, newsletters)
- Photographic

These are stored and displayed in a variety of locations as outlined here:

Pioneer Cottage Buderim:

Room	**Type of Collection Materials**
1 Hall	Objects, Paper Based and Archival Materials, Photographic
2 Museum Display Front Room	Objects, Textiles and Costume, Paper Based Materials, Photographic
3 Display Sitting Room	Objects, Textile and Costume, Photographic
4 Display Dining Room	Objects, Textiles and Costume, Paper Based Materials
5 Display Bedroom	Objects, Textiles and Costume, Photographic
6 Display Kitchen	Objects, Textiles and Costume
7 Museum Display (verandah near Dining)	Objects, Textiles and Costume, Photography
8 Display Textiles (verandah near Display Bedroom)	Textiles and Costume, Paper Based and Archival Materials, Photography,
9 Display Bathroom	Objects, Textiles, Paper Based and Archival Materials
10 Display Verandah	Objects

11 Display Upstairs Childs Room	Objects Textiles and Costume, Paper Based and Archival, Photography
12 Display Upstairs Bedroom	Objects Textiles and Costume
13 Display Slab Outbuilding	Objects, Textiles and Costume, Tools and Outdoor Industrial Equipment
14 Grounds and surrounding area	Tools and Outdoor Industrial Equipment

Vise House:

Room	**Type of Collection Materials**
15 Vise House Office	Paper Based and Archival Materials
16 Vise House Carport Storage area	Textiles and Costume, Objects, Paper Based and Archival Materials, Oral History and Lecture Series
17 Vise House Laundry Storage area	Paper Based and Archival Materials, Objects, Oral History and Lecture Series
18 Vise House Public Meeting Room/ Collections/ Conservation Area/ Library shelves	Library, Paper Based and Archival Materials
19 Vise House Toilet Storage Area	Paper Based and Archival Materials
20 Vise House Kitchen	no collection materials

Objects

This includes the JK Burnett Family related objects, South Sea Islander Artifacts, and Buderim Pioneer heritage related objects. Most objects are in sound condition and tagged and numbered, although there are some objects in the collection that in a deteriorated condition and require treatment or repair. An Objects Conservator should assess collection objects on a more individual basis to ascertain treatment needs and upgrade the display conditions of individual items. Objects are often on permanent and open display, and some are poorly supported or are made of inherently fragile materials and require rest periods.

A variety of the most interesting and valuable items from the collection are displayed here. The display is mostly well laid out and objects are mostly well spaced. More attention should be given to the use of archival materials and the display would benefit from some minor adjustments such as Mylar barriers to be placed between objects and wooden shelves, poorly supported objects to be padded out with archival materials, and hinged objects supported so that they are not bearing the weight of their own lids.
An Objects Conservator should be engaged to stabilise some objects such as corroding metal components. A lot of these items require only a small amount of work to bring them up to Museum display standard. Some of this work could be carried out by volunteers if working alongside an objects conservator.

Objects are dusted regularly and mostly have plenty of air circulation, although objects housed in display cabinets have minimal air circulation, and the buildup of organic vapors is noticeable when cabinet doors are opened. The display cabinets are made of acidic materials, and are not ideal for object storage. It would be preferable to leave display cabinet doors open to allow air circulation, and a routine of periodically opening display cabinets after hours would at least help to dissipate built up vapors. Objects displayed on top of wooden surfaces should have a Mylar barrier placed between it and the wood as protection from the off gassing of organic vapors. This in itself is a large scale project.

Currently, the cramped display conditions are impacting on the ability to clearly convey the Pioneer Cottage Buderim story. Removing some items from display would help draw visitor attention to more significant objects and extend the Pioneer Cottage Buderim experience, allowing visitors to more comprehensively engage with the story.

It is inevitable that objects stored in the attic will deteriorate at an accelerated rate given the extreme temperature and relative humidity conditions. Any significant collection items here should be removed and displayed elsewhere. Objects displayed here should primarily be prop materials, particularly during the summer months when conditions are at their most extreme.

Some items from the Collection are stored in the Laundry Store room, as well as some ephemeral items, unregistered items, archival storage and packaging materials, and other odds and ends. Shelving is sturdy and constructed of wood sealed with acrylic paint, and covered in Cellaire as a barrier against the off gassing of organic vapours from the wood which accelerates the deterioration of objects.

Most objects in the garage storage area are stored in an orderly manner, but conditions are cramped. Decluttering and deaccessioning would greatly improve storage conditions.
The Laundry storage area is very cluttered, and although inroads have been made to store object in an orderly way and with correct materials, this space has areas that are arranged in a haphazard manner. This could lead to the damage of objects from being knocked around, poorly supported in storage, stored in direct contact with the ground, and leaning against or stacked on top of other objects that are made of fragile or incompatible materials. Collection items are mixed in with non collection items, empty boxes and packaging from electronic goods etc. Given the good to excellent environmental conditions in both storage rooms, any rubbish or non collection items should be removed and stored elsewhere or discarded, sprayed for insect pests and used solely for storage of collection

items. Almost all objects have been tagged and numbered, and it would be advisable to also number shelving bays in an effort to keep objects in an easily locatable manner.

Most objects in storage have been carefully wrapped or boxed in acid free materials. Some objects in the Laundry storage area are enclosed in non archival cardboard boxes, and any remaining brown cardboard boxes should be replaced with polypropylene boxes, removing an insect food source and an acidic storage material.

There is an urgent need for extra storage and collections work space and the construction of an additional building for storage purposes. This would allow some collection items on permanent display to be rested or rotated. Volunteer David Woods has suggested a compactus storage, and this would do a lot to help alleviate the cramped conditions.

Supplies of archival materials are stored in the laundry storage room, the garage storage room and the office. They should be gathered together from their various locations and stored together. Upright storage of rolled conservation materials on sturdy dowels should be investigated as a way to keep archival materials in a more orderly manner.

Recommendations:

- Some objects are actively deteriorating and need treatment by an Objects Conservator. In particular the glass painting need urgent attention, as do corroded metals splitting wood and embrittled leather objects.
- In some cases, objects made of incompatible materials are stored in proximity with each other. These need to be separated.
- Some further hands on conservation training for volunteers in basic applied and preventive conservation tasks. Directions should relate to projects to upgrade to specific objects as well as some generalist advice.
- Complete the tagging and numbering of all objects. Tags should be attached to the object with cotton tape, so that information can't be accidentally lost if an object is moved.
- Shelves should be labelled in a more permanent manner.
- Increase storage space and create a space for conservation and collection handling. In the short term this could be done by installing compactus storage in existing storage

areas or investigating offsite storage options. In the long term this could include building a second storey extension to Vise House.

Tools and Outdoor Industrial Equipment (including farm, timber, mining, sugar industry related)
Tools and outdoor industrial equipment are in varied condition. Most objects stored outside are unstable and actively deteriorating. These should be relocated to better storage or display environment. Many metal tools in the slab outbuilding have stable rust, but others are unstable and show deliquescence. Non metallic tools and industrial equipment such as wood and leather should not be stored in the slab outbuilding and are actively deteriorating. Some rusted metal tool blades have been unsympathetically painted with silver paint and corrosion is now starting to show through this painted surface. Some objects such as the lawnmower have been painted to give a very new appearance. The historical accuracy of retaining this paint layer should be reassessed when these objects are eventually conserved again in the future.

An Objects Conservator should be contacted to discuss the extent of this restoration, and assess the extent of these works in light of conservation planning. The decision of what era to restore a tool to should be made jointly by the Curator, Conservator and Workshop Project Leader, based on research, collection planning principles, and respect for the original historical fabric. Some documentation of work is recorded, however it would be good to standardise this process, and keep a more comprehensive record documenting the restoration materials used, original fabric and extent of restoration.

Recommendations:

- Remove susceptilbe tools and outdoor equipment to upgraded storage conditions
- A treatment documentation template to be filled out by volunteer restorers.
- Any reinvention of areas should be based on the principle of doing as much as is necessary, but as little as possible.
- Need to document original condition more extensively.
- I would recommend that a conservator review and assess approach to restoration work.

Textiles and Costume

The Textile display areas consists of a display of the garments and other textile items. Displayed items are well laid out and aesthetically interesting, however there could be some improvement to supports, and materials used for display. Garments are originals, and in some instances are supported well with padded archival supports, however most are currently housed on shop style mannequins. It is recommended that the mannequins be padded out slightly with Dacron so the garments retain their shape.

In other instances non archival supports are used, such as the Styrofoam heads used to display bonnets. At other times inadequate support is used, such as the folded flat textiles in the textile display are, and the men's shirts displayed in the cabinet in the main display area. Padded archival supports should be made for each garment so that they are not displayed with tight folds.

Textiles in the low cabinet are rotated on a six monthly basis, however there are many textiles on permanent display in high light levels as window blinds are not drawn to block light. A rest period is required for sensitive textiles on permanent display to reduce cumulative light damage. In areas where there are no blinds or the blinds ae not drawn, light levels are in excess of recommended museum levels for susceptible materials such as textiles.

There are some textiles stored in the plan drawer cabinets in the cottage built in Verandah. This is a good storage strategy and it reduces light falling on these textiles. Some minor adjustment is needed to this storage, such as enlarge Mylar covers when necessary, so that textiles are fully covered at all edges, and repositioning and flattening any textiles that are crumpled or folded over. All plan drawers should be kept closed when not in use. Textiles stored and displayed in the Attic are at risk. Any textiles here that are not prop materials should be assessed for significance, and any significant items moved to a more climate stable location.


Some textile items not currently on display, are stored individually wrapped or boxed in closed environments such as cupboards, plastic containers, plan cabinets and shelves. This effectively limits the amount of dust that could collect on them. However, in some cases it is necessary to separate collection objects from storage materials that are likely to off-gas. The wooden drawers inside bedrooms and wooden display case shelves will off-gas organic acids, hastening the deterioration of objects stored inside of them. Volunteers are in the process of wrapping textiles in wooden drawers in archival materials

Stored textiles are mostly very well stored and cared for in fairly stable climate conditions using archival solander boxes, with archival materials are used to separate each garment. Unfortunately the feather fans in the Vise House garage storage areas were recently decimated by insect infestation. Neighbouring susceptible collection items should be inspected and treated if necessary. Spot inspection of nearby boxes showed evidence of cockroach and silverfish droppings and grazing of other textile items. A thorough inspection of stored textiles is required to identify any other pest issues and insect affected textiles should be treated for pests.

Library

Most Library books are in a stable condition and well stored and cared for. The community meeting room at Vise House contains some glass fronted powder coated metal storage shelves that house the book collection. Books are stored upright, and this is a good enclosure for this collection. Books stored here are in generally good condition and storage conditions are stable.

Particularly valuable library items are stored in the Safe in the Vise House Garage. All items in this safe have been catalogued and indexed and are kept stored in archival quality materials, such as the Mylar encapsulated letters, and the documents stored in buffered archival paper envelopes. Valuable books such as the Australian Cavalry War Book is kept in an archival greyboard box and wrapped in calico. Pages with torn edges and corners have been repaired with scotch tape. It is good that the need to repair the book was noticed; however, this pressure sensitive tape will cause damage to the book and should be removed as soon as is possible and replaced with a Japanese tissue and starch paste repair.


Paper Based and Archival, **Oral History and Lecture Series**
Most paper based and archival materials are stored in steel filing cabinets with suspension files, brown built cabinets, or large plastic tubs. This is a good choice of storage enclosure as they are reasonably stable materials and help to protect the contents from moisture light and dust. This collection includes documents relating to Buderim Progress Association, historical records, newsletters, scrapbooks and newspaper clippings and a few framed works on paper displayed in the cottage.

The Oral History and Lecture series includes paperbased documents and also audiovisual materilas and is mostly stored in the Laundry storage area at Vise House. The audio visual collection is stored in the safe in the converted garage storage area, and is in the process of being digitized by a volunteer.

Some paper based materials are yellowed, tatty at the corners and edges, have grime from handling, and are creased, especially at the corners. There is evidence of old insect activity, and extensive yellowing and embrittlement of some items. Tears, creases and curling has occurred to some documents. Rusty marks from pins and staples have stained some of the pages. Old staples should be removed and replaced with polypropylene paperclips. Rubber bands have degraded and should be removed. Yellowed sticky tape repairs are present on some documents and should be removed. More recent sticky tape repairs has also been noticed and should be removed asap. The maps are stored rolled in cylinders above the library shelves, and would be better unrolled and stored flat.

There are also cabinets containing paper based records and administrative materials kept in the bathroom of Pioneer Cottage Buderim and Vise House. Unfortunately there is no space to move this cabinet to a more appropriate area, however the cabinet does offer good buffering from temperature, relative humidity and light fluctuations, prolonging the life of the papers inside.

The significant Sybil Vise collection is stored in a cabinet in the Toilet, as are Buderim Historical Society records and other documents. The John Burnett Ledger was found recently. Letters minutes are stored in polypropylene boxes. Valuable letters such as Annie's letters home are written on both sides of paper and are hard to read. Some of these have been conserved by Volunteers as the original materials are of poor quality. This

is a work in progress. The Buderim Progress Association minutes have been recently conserved.

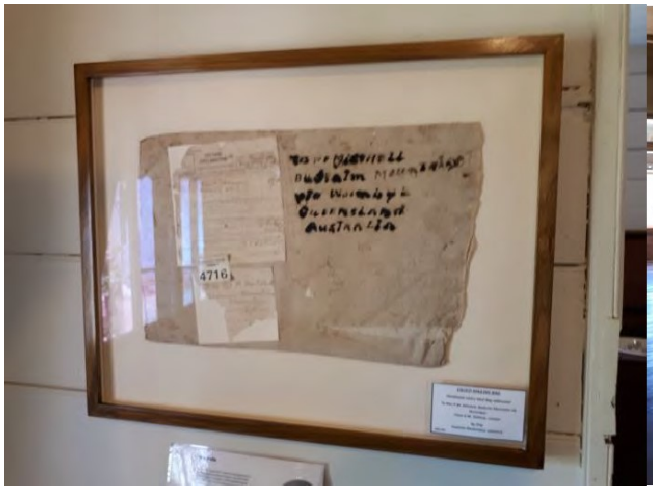
Particularly valuable paper based and archival items are stored in the Safe in the Vise House Garage storage area. All items in this safe have been catalogued and indexed and are kept stored in archival quality materials, such as the Mylar encapsulated letters, and documents stored in buffered archival paper envelopes.

Paper based materials in the office are stored in archival materials or in laminated desk drawers. Office furniture is in good condition, and collection items here are stored in a neat and tidy manner. Conservation manuals and resources are stored here in an orderly manner. Some collection items are temporarily located in the office when being worked on.

There is a collection of Scrapbooks stored in the main display area of Pioneer Cottage Buderim. These consist of original newspaper articles that have been glued into a scrapbook. The process of making this interesting album is part of the artefact itself, however the materials are of poor quality and are yellowed and becoming embrittled with age.
There are a few paper based documents and artworks that are framed and displayed. Many old frames and framing materials release acids, and should be deframed and replaced with archival materials where possible.

Recommendations:

- Paper based materials in the collection would benefit from the removal of sticky tape, rusted staples, rubber bands etc. These materials are causing staining embrittlement and corrosion.
- Valuable, fragile and damaged paper based materials should be assessed and repaired by a Paper Conservator, and then stored in archival materials to prevent damage from handling or overcrowding.
- Continue to scan paper based materials of poor quality, photos, albums and scrapbooks, so that a backup copy is available.
- Any particularly valuable or fragile originals should be placed in Mylar enclosures to avoid damage.



Photographic Collection

Photos are all stored in archival boxes and digitised, except for those that are in display in the dining room. Displayed photos are at risk from high light levels and significant framed photos should be replaced with replicas for display. Also many old frames and framing materials release acids, and photos should be deframed and replaced with archival materials where possible.

In Pioneer Cottage Buderim main display area, there are photos stored in poor quality acidic albums, and there are newspaper cuttings and other items pasted in scrapbooks.

These poor quality albums should be upgrade to archival quality album with “photsafe” acid free pages and polypropylene sleeves. A paper conservator should advise on any treatment needs and assist with this.

Recommendations:

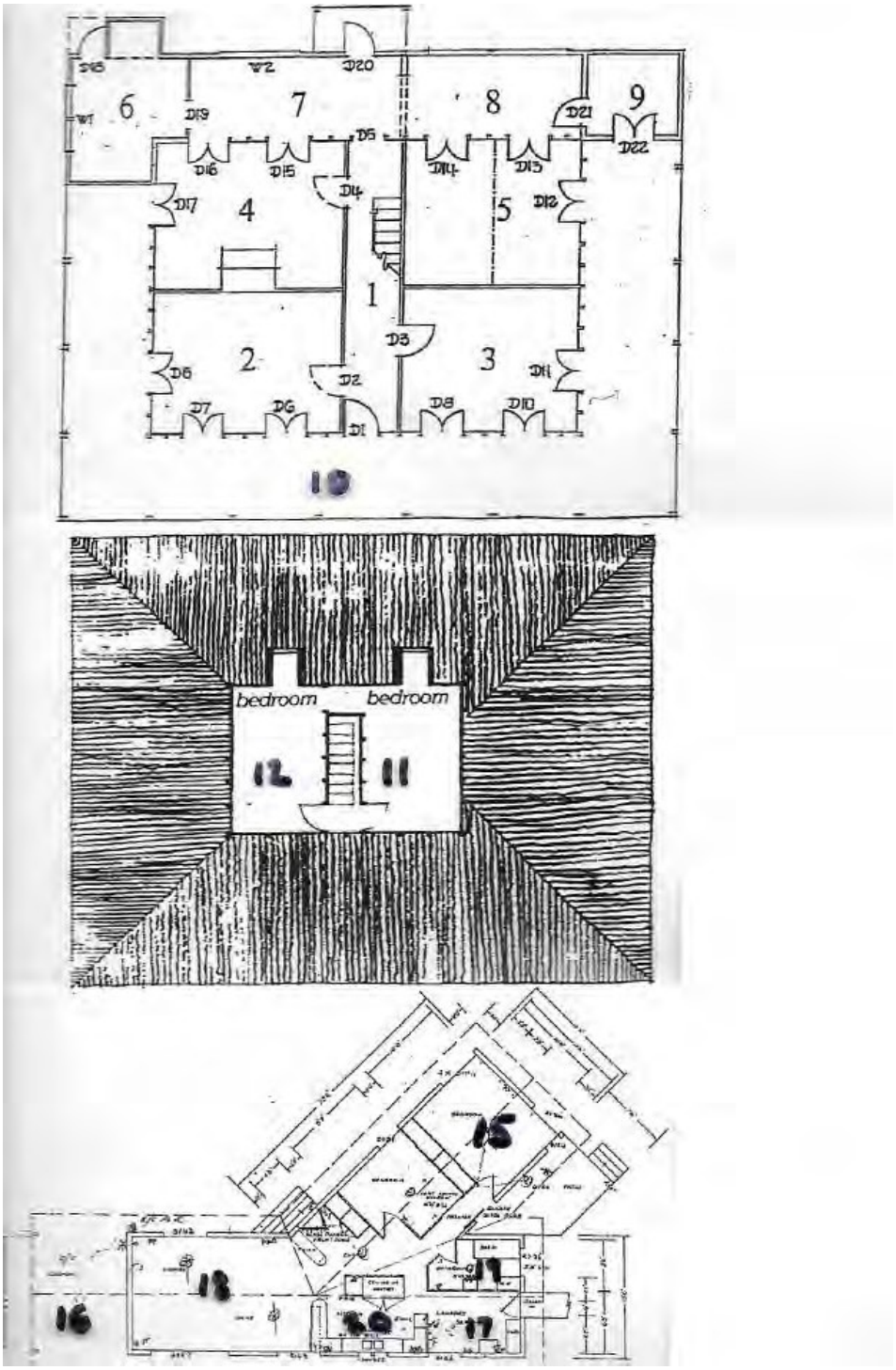
- Treatment needs assessment and repair by a paper conservator

7. Building

Location, Structure, Layout

The Pioneer Cottage Buderim buildings are located near the Buderim Cultural Precinct and is situated on a large open spaced area near the centre of Buderm.

The floorplans below outlines the use of each space: -



1 Hall
2 Museum Display
3 Display Parlour
4 Display Dining Room
5 Display Bedroom
6 Display Kitchen
7 Museum Display
8 Display Textiles
9 Display Bathroom
10 Display Childs Room
11 Display Verandah
12 Display Bedroom
13 Display Slab outbuilding
14 Grounds and surrounding area

15 Vise House Office
16 Vise House Carport Storage area
17 Vise House Laundry storage area
18 Vise House Public Meeting Room/ collections/ conservation area/book storage area
19 Vise House toilet storage area
20 Vise House Kitchen

The Pioneer Cottage Buderim is of horizontal timber slab construction with traditional plaster wall linings in the ground floor rooms. The built in Veranda has fibro wall panelling in the interior. The attic rooms have no wall lining. The cottage now has a galvanised roof, and originally was shingled. The slab outbuilding consists of vertical roughly hewn timber slab construction and has a shingled roof. Pioneer Cottage Buderim building in good repair although the front doors and some areas of the kitchen and built in Verandah have large gaps where it adjoins the floor and walls. These gaps should be blocked to prevent ingress from insect and rodent pests, dusts, and also to provide some insulation to help moderate climatic extremes.

The newer Vise House building is of brick and tile construction. The garage has been built in so that it can be used as storage, and is lined with fibreboard panelling. The Vise house building is in excellent condition and good repair, and is well maintained.

The adjoining built in garage is constructed of fibreboard and has not windows. It has a reasonably good capacity to insulate from the outside environment.

The slab outbuilding is in sound condition, although is unsealed and has many gaps. Biological growth on the exterior needs attention, and a timber preservative is also recommended to protect the building structure.

Building's Capacity to Moderate Climate

The Vise House building is of brick construction and has insulation and wall panelling. This provides significantly better insulation than the other buildings. The area of the building with the best environmental conditions is Vise House, and then the central ground floor

rooms of Pioneer Cottage Buderim. In these two rooms the conditions are close to ideal environmental conditions recommended for a museum collection. From a climate point of view, this is the best area for storage and display of vulnerable collection items. The adjoining Vise House Garage store room also has relatively good environmental conditions.

There is no wall panelling or insulation in the attic or Slab outbuilding. Subsequently, environmental conditions inside the slab outbuilding are extreme, with large amounts of cyclic fluctuation over the course of a 24 hour period. These structures do little to protect the contents of the building. The Attic rooms, Slab outbuilding and outdoor open air storage have poor conditions for housing collection objects.
The building capacity to moderate climate is discussed in length in the section on Environment.

Security
The Pioneer Cottage Buderim building, Slab outbuilding and Vise House are all reasonably secure. There are solid doors at the front and rear of the building, and glass doors off the dining room, bedroom and sitting room, all of which have locks. There is a security alarm and cameras monitoring the premises. It would be useful to install a sound sensor on the front door to alert staff when visitors arrive and they are away from the reception desk.

Museum visitors are either accompanied or closely monitored by staff or volunteers.
It can be difficulty to keep track of visitors in the Slab outbuilding and at all times when they are on the premises, but there has only been one known attempted theft, and this was curtailed by an alert volunteer.

Keys to the building are kept hidden behind the front door, but are visible to any visitors that look closely. There is also a set of keys held in the office. Several Volunteers on the committee hold keys, and keys are accessible by all volunteers. Theft from Volunteers is not considered to be a concern. Keys in the office and behind the door should be covered to reduce risk from visitors.

8. Environment

Light

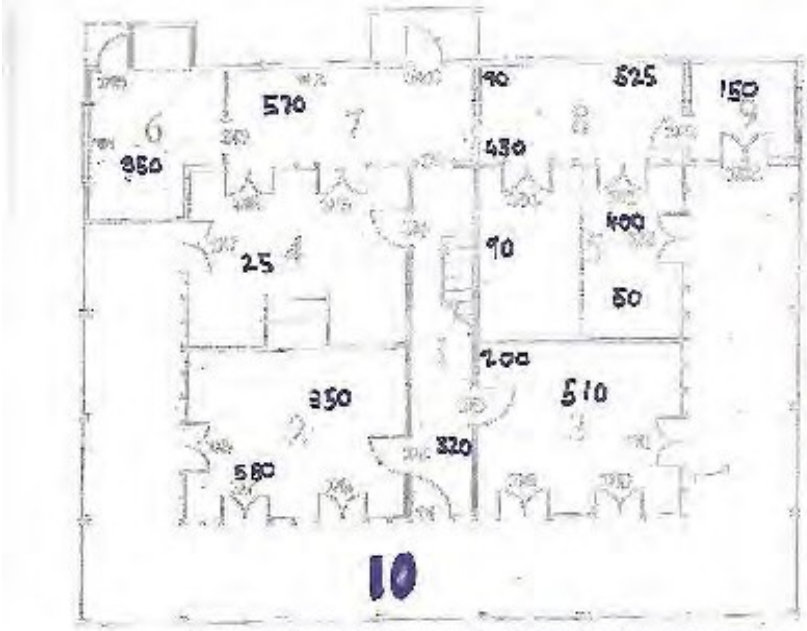
Light damage is permanent and cumulative, its energy causing damage to materials from the UV, Visible, and Infra-Red parts of the spectrum. UV light (UV/Wlumen) is highly energised (at wavelengths 320-380nm) and induces photochemical deterioration. Visible light (380 -760nm) can induce deterioration at the high energy blue end of the spectrum, as well as by heat produced by light at the lower energy red end of the spectrum. The brighter the light is (lux) the more damage the light causes. Visible light can also affect the way the viewer distinguishes an objects colour. Infra-Red light (760nm+) can heat objects, activating processes of chemical deterioration that can cause embrittlement, fading, and discolouration. Heat changes caused by Infra-Red light can also affect Relative Humidity levels (Gilroy and Godfrey, 1998, p1-2)

Ideal light conditions for items in a museum environment are:

Sensitivity	UV content	Illuminance	Material type
Most sensitive	<30 u watt/lumen	50 lux	Textiles, feathers, animal products including skin and hair, dyed leather, tapestries, prints, drawings, stamps, manuscripts, colour photo prints and transparencies, paintings.
Moderately Sensitive	<80 u watt/lumen	200 lux	Lacquer ware, wood, furniture, horn, bone, ivory, black and white photographs, plastics and some minerals
Least sensitive	<200 u watt/lumen	1000 lux (assess effect of radiant heat)	Stone, ceramics , glass and metals

(Thompson, G., 2002, p36)

A survey of lux level spot readings in Pioneer Cottage Buderim on a partially cloudy winter day gave the following results:



Pioneer Cottage Buderim:

Room

1 Hall
2 Museum Display Front Room
3 Display Parlour
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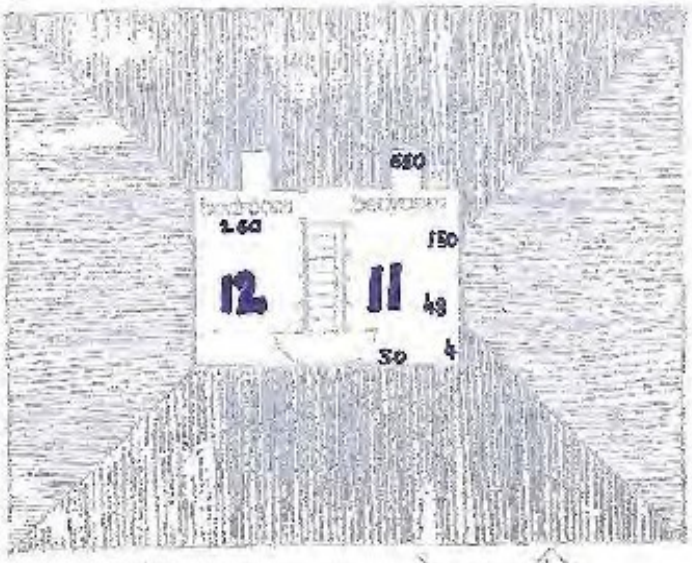

Vise House:

Room

15 Vise House Office
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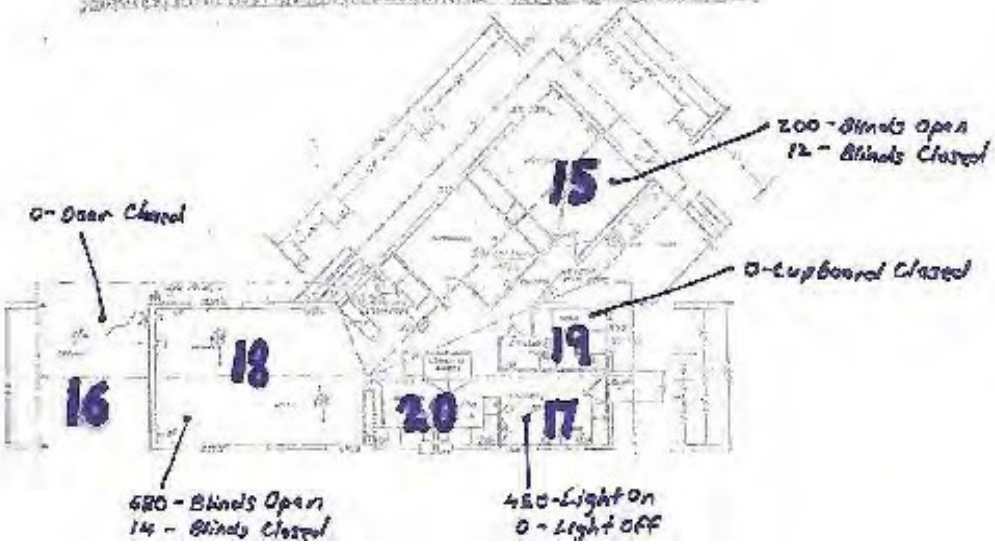


Light at the Pioneer Cottage Buderim site:

Curtains and Blinds

The Volunteer Committee is conscious of the need to reduce light levels, and blinds have been installed in most areas of Buderim Cottage and Vise House, however staff need to ensure that the blinds are always kept closed, particularly when there are few visitors or the building will be unattended for a few days. Most blinds were open on each of my several visits to Pioneer Cottage Buderim. There needs to be some behavioral modification, so that volunteers are in the habit of leaving blinds fully drawn.

It is particularly imperative that blinds remain drawn in the main display area, sitting room and built in verandah area of the cottage, where light levels are high and materials are particularly susceptible to light. There are historic curtains on the windows in almost all rooms which are also very susceptible to high light levels. Blinds are being purchased as funds allow and were recently purchased for Vise House. Blinds are still required for the living room, bathroom, and ground floor bedroom of the cottage.

Pioneer Cottage Buderim Building:

- There have been some ingenious solutions to mitigate the amount of light falling on significant and light sensitive materials, such as the recent project to remove the conserved and fragile ensign flag from a wall in a high light area; and instead house it in a draw beneath a table top where it can be rolled out for viewing when needed.
- There are many textiles on permanent display in high light levels. A rest period is required for textiles on permanent display.
- There are also many original photographs, paintings and works on paper that are on permanent display. These should be replaced with replica images of the original works.
- Planning of vine covered screens has reduced light levels along the built in verandah area, but light levels are still higher than is desirable in the built in Verandah unless blinds are drawn.
- There are high light levels in the attic near the windows, however these windows are small and light does not enter far into the room. Light levels are mostly low in areas where collection items have been placed.
- There are French doors with large windows along the north western side
- High light in the main display area is an issue, as there many sensitive and valuable original collection materials stored here. Drawing blinds and rotating objects on display where possible would prolong the life span of these items. Sensitive collection items should not be placed in this area unless light levels are significantly reduced by permanently drawing the blinds.
- Uncovered fluorescent bulbs are present in the kitchen, bathroom and textile display area. A conventional light bulb is present in the museum display area beside the kitchen. Most other rooms in the house have traditional light fittings with conventional bulbs. All of these lights are only rarely switched on.
- In areas where there are no blinds or the blinds ae not drawn, light levels are in excess of recommended museum levels for susceptible materials such as textiles.

Vise House Building:

- Blinds have recently been installed in Vise House.

- Blinds in the Meeting room are usually left partially open resulting in high lux and UV when open; and ideal lux and UV levels when closed.
- Blinds in the office are usually kept closed.
- Lights are only turned on a few times a week for a total of about 12 hours. Collection items here are infrequently exposed to light except for very short periods of time when being accessed or worked on.
- Collection materials stored in the Laundry, and Bathroom have low to no light.
- The library and archival and paper based materials in the meeting room are prone to high light as blinds are often not kept drawn.
- The fluorescent light in the Vise House Laundry storage area has lux of 450, but is almost always turned off.

Garage Storage area:

- The room is completely dark when not in use. Only minimal light enters the garage when the door is open, and this does not affect collection materials as they are stored in tubs and boxes. Light levels here are optimal.

Slab Outbuilding

- Light levels in the outbuilding are low, and many of the objects stored here are metallic and not light sensitive.

Recommendations:

- If collection materials are to be left out in the open for long periods of time, blinds must remain drawn to reduce cumulative light damage.
- Continue to purchase blinds for the remaining windows as funds allow.
- Rest periods are required for susceptible materials types such as photos, paintings, textiles and paper on permanent display.
- Replace original photos and paper based works with replicas.

Temperature and Relative Humidity

After light damage, RH and temperature are the most significant factors leading to object deterioration. The main impact of temperature is to increase the rate of chemical degradation reactions in objects, and to increase relative humidity, as a 10C rise in temperature, will double the rate at which an object will deteriorate (Gilroy& Godfrey, 1988, 5-6). Temperature fluctuations cause distortions, especially to organic materials through expansion/contraction of the cellular structure. High humidity will initiate metal corrosion, and low humidity will cause embrittlement of paper and textiles, plus desiccation of organic materials such as bird skins.

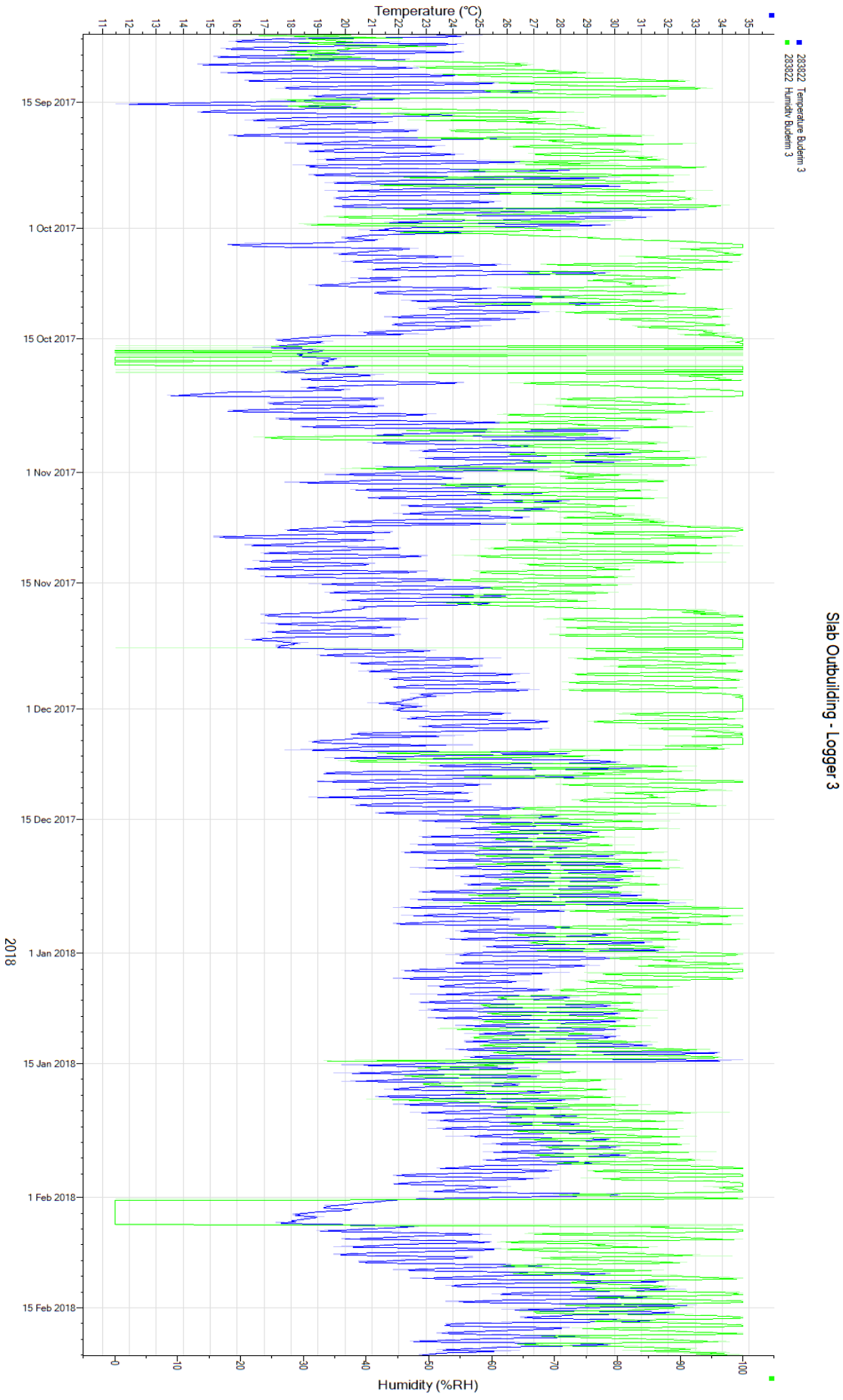
RH must be kept at levels where moisture is high enough to maintain flexibility; but also low enough to slow deterioration of materials and to control insects and mould. It is important to maintain temperature and RH within as narrow a range as possible, as high levels of fluctuation within a 24 hour period place greater stress on an object than gradually changing or constant conditions at less ideal levels. Maintaining good air circulation is also important, so that pockets of dead air don't form and promote the growth of biological agents, mould, and insects. Ideal RH levels are:

- Less than 45% metal, ceramics, stone, plaster

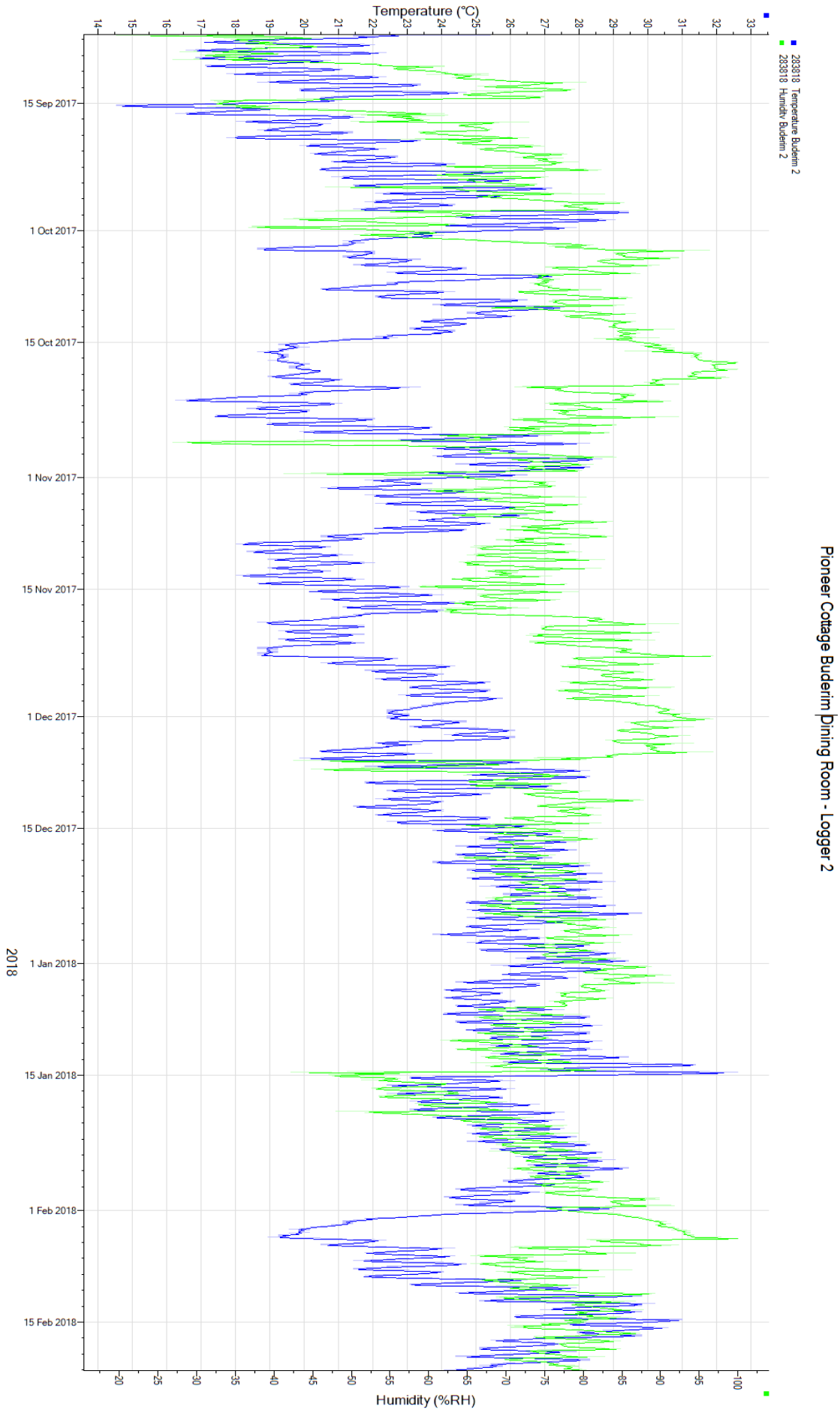
- 40-45% +-3% textiles, paper
- 65% leather, bone, ivory, wood
- 15-25C recommended temperature level for all materials.

However, a general range of 40-70% is acceptable for mixed collections such as this one, the primary aim being to reduce RH and temperature fluctuation rather than reach ideal levels (Gilroy & Godfrey, 1998, 4-7,160).

RH and Temperature levels were monitored at Pioneer Cottage Buderim with data logging equipment over the 6 month period 06/09/2017 – 20/02/2018. The location and results of the data loggers were as follows:



Slab Outbuilding - Logger 3



Pioneer Cottage Buderim Dining Room - Logger 2


Temperature (°C)
283826 Temperature Buderim 4
283826 Humidity Buderim 4
15 Sep 2017
1 Oct 2017
15 Oct 2017
1 Nov 2017
15 Nov 2017
1 Dec 2017
15 Dec 2017
1 Jan 2018
15 Jan 2018
1 Feb 2018
15 Feb 2018
2018
Humidity (%RH)
Pioneer Cottage Buderim Child's Attic Bedroom - Logger 4

Inside Slab Outbuilding:
6/09/2017 –20/02/2018
0-100% RH, mostly within the range of 28%-100%
11.5-34.5C;

Inside Display Dining Room:
6/09/2017 –20/02/2018
15.5 - 100% RH, mostly within the range of 37-100%
14.5-32.2C

Inside Childs Attic Bedroom:
6/09/2017 –20/02/2018
0-100% RH, mostly within the range of 20-100%
12.3-38.9C

These readings were taking during the hot and humid summer months, and results indicate that seasonal environmental variations experienced inside the Attic Bedroom and the Slab Outbuilding are very dramatic, and closely follow the seasonal variations of climate in the nearby town of Nambour shown in the table below. Interestingly, conditions inside the Attic Bedroom are hotter than in the Slab Outbuilding. The Attic Bedroom and Slab Outbuilding are very poorly insulated from the external climate, with no insulation of external walls or roof lining, and no air-conditioning. This affords very little protection for collection material in these areas. It is interesting to note the readings of 100% RH. This is likely the result of condensation on the RH sensor during periods of high humidity, or wetting of the sensor during rainfall.

No long term readings were able to be collected in the built in Verandah areas, but spot readings of temperature and RH in this area was observed to be greater than in other areas of the house.

The conditions inside the Display Dining Room are much more moderate and show significantly less extremes of fluctuation within a 24 hour period. This is the result of the buffering of the building structure from the external climate. Conditions within the Dining room are representative of conditions within most of the ground Floor of Buderim Cottage and are close to within an acceptable range for the storage and display of Museum objects, although the occurrences of very high humidity events over 80% is a concern and the cottage must remain well ventilated to prevent mould growth during these conditions.

Buderim experiences a humid subtropical climate with hot and humid summers and mild to warm winters with cool overnight temperatures. Its historical climate statistics are not available, however climate statistics for the nearby town of Nambour are very similar, and a typical yearlong data set collected in 2006/7 is outlined in the table below:

	Monthly Relative Humidity and Temperature Statistics, 2006 - 2007											
NAMBOUR	Nov/06	Dec/06	Jan/07	Feb/07	Mar/07	Apr/07	May/07	Jun/07	Jul/07	Aug/07	Sep/07	Oct/07
Mean RH - 9 am	60	64	69	75	71	67	76	68	58	69	64	62
Mean RH - 3 pm	55	57	61	65	61	55	61	56	35	51	51	53
Maximum RH - 9 am	93	95	95	96	94	86	96	100	86	99	96	87
Maximum RH - 3 pm	97	80	83	96	80	70	94	99	66	97	96	95
Minimum RH - 9 am	26	50	56	58	58	49	52	35	25	30	24	22
Minimum RH - 3 pm	15	42	50	49	43	21	33	28	10	14	14	19
Mean Temp - 9 am	23.7	23.9	25.9	24.8	25.4	22.9	21.1	16.2	15.5	18.5	20.5	23.6
Mean Temp - 3 pm	25.5	24.9	27.6	26.0	27.2	25.1	23.8	19.1	20.1	21.6	23.8	26.1
Maximum Temp - 9 am	28.0	27.0	29.3	28.4	29.6	24.5	24.5	20.2	18.6	21.4	25.6	27.8
Maximum Temp - 3 pm	37.5	29.8	32.4	28.4	32.7	27.9	27.5	23.9	25.7	28.4	32.1	31.4
Minimum Temp - 9 am	19.2	18.6	19.7	20.2	22.1	19.7	18.5	10.7	12.3	14.7	14.3	19.3
Minimum Temp - 3 pm	19.5	19.2	22.9	21.2	24.4	22.3	18.3	12.4	16.9	14.7	15.0	21.0

http://www.bom.gov.au

The data in this table gives a close approximation to what the external environmental conditions at Pioneer Cottage Buderim will be, and is useful as it provides an estimation of climate information during the winter months, when no data was collected. By comparison we are able to gauge the effectiveness with which the climate is controlled within the various building spaces. RH is usually high at night time in conjunction with low temperature. Low RH usually occurs during the day in conjunction with high temperature.

RH in poorly insulated areas like the attic and slab outbuilding is moderated by up to approx. 10% from outside conditions, and closely mirror the external climate. There is very little insulation against daily maximum external temperatures, although some moderation of daily minimum temperatures. Little protection from deterioration is provided.

No long term readings were able to be collected in Vise House, but spot readings of temperature and were observed to be lower than in Pioneer Cottage Buderim, due to the well-insulated brick construction of this building. As Vise House is a sealed masonry building of solid well insulated materials it is likely that RH is moderated by as much as 20% from external conditions, and 5-10C from external temperatures, bringing the environment very close to within the recommended range for objects storage and providing a suitable storage environment for long term preservation.

These results show that the Outbuilding and Attic moderates humidity by an average of only 12% from outside temperatures, does little to insulate against daily maximum external temperatures, but does provide some moderation of daily minimum temperatures.

The area with the most ideal climate are the ground floor rooms at Buderim Cottage, and the rooms within Vise House. This space is well utilized, with many of the most sensitive collection items being stored or displayed here. The next best area is the adjoining built in garage store room. Further ongoing temperature and RH data logging of this area is recommended. Although the climate here is not absolutely ideal for the storage of sensitive materials, it is also low in light, and those objects that are stored in this area are housed in well buffered solander boxes or containers, which provides extra insulation

from climate extremes. It is advisable to move sensitive collection materials from the attic rooms to the Store Room at Vise house if room can be made available.

The high spot readings in the built in Veranda areas of Pioneer Cottage Buderim are a concern, given the sensitive nature of many of the materials stored here. Further ongoing temperature and RH data logging of this area is recommended. It is advisable to reduce the size of this display by removing many of the sensitive materials, and rotating those that are left on a frequent basis.

The slab outbuilding houses a large amount of relatively robust iron tools and implements, which is a better choice for this area. However, although the tools are relatively robust objects, they will suffer from long term storage in these extreme climate conditions, particularly if they are also comprised of materials such as wood, leather and paint coatings.

Some large metal and wood objects are stored outdoors and are suffering from the lack of protection. Others such as the large sugar pan are stable. In particular, the wheelbarrow leaning against the kitchen wall is showing rotting of timber components, and the iron alloy pails beneath the water pumps are showing liquid droplets of rust and have completely rusted through in some areas.

Recommendations:

- Move sensitive materials collections from the Attic and Built in Verandah areas to the Store room adjoining the Uniform Display Area, or a stable offsite storage area.
- Ongoing monitoring of environmental conditions, and logging of climate within the built in verandah area and the built in garage storage area should be carried out to get a more accurate idea of the climate experienced in these collection areas.
- To further insulate the cottage from external temperature and RH conditions, the cottage doors should all be kept closed unless visitors area entering the cottage.
- Move badly deteriorated objects stored outside to a more protected indoor location. (if there is no room available on site, then protected off site storage is preferable to the continued rapid degradation of these objects)
- Remove algal and biological growth from rotted timber objects and building components with a biocide such as Alginox. Apply a timber preservative to timbers located outdoors.

Water and Mould

Pioneer Cottage Buderim is located in a cyclone prone area and there have previously been some water ingress issues in the slab outbuilding during heavy rain, as is to be expected from the unsealed construction of the building. The primarily metal collection materials stored here are more robust that in other areas of the site, but still susceptible to damage.

There has also been a leak through the window in the attic, which has caused a corresponding leak in the dining room during heavy rain. This has caused a floor board in the dining room to break. It has been investigated and repaired recently and should be further monitored to ensure the leak is fully repaired.
Leaves in the gutters of the cottage are cleaned regularly so that future overflow of gutters is avoided.

Recommend: Monitoring building for any further water ingress in this area.

Pioneer Cottage Buderim and Vise House are mostly free of mould. There are minor mould issues in some areas of the kitchen such as beneath the kitchen hutch. Mould growth is possible when relative humidity (RH) exceeds 65%, especially in areas where there is also large quantities of dust and/or limited air circulation. This also presents an OH&S respiratory issue for staff handling mould affected materials. Mould is also potentially a problem in the Display Area, where humidity frequently exceeds 65% RH, and to a lesser extent, the office, where RH sometimes exceeds 65%.

Recommendations*:*

- A fan should be used to help increase air circulation in any mould prone areas.
- If mould is discovered, the following measures should be implemented:
- Dry brush vacuuming of mould affected surfaces with a vacuum fitted with a hepa filter. (During these works, the rooms should be cleared of people, and dust masks, nitrile or latex gloves, safety glasses should be worn).
- Clean mould affected surfaces with a solution of 70% methylated spirits in water to remove residual mould from surfaces (depending on solubility - spot test first to ensure that any surface coatings are not dissolved by ethanol). The area should be well ventilated during this work and a mask for solvent use should also be worn during this process. Otherwise, spot test, washing surfaces and spraying with Glen 20 will also be effective. (Glen 20 Contains 0.1% phenylphenol, 68% alcohol, 32% water).

Pests

A significant threat to the collection is biological agents. Although general housekeeping has been excellent, there is still substantial evidence of insect activity, particularly in less well sealed areas such as the kitchen, enclosed Verandah, and slab outbuilding. Sticky traps should be placed along walls throughout the various buildings, and an inspection for pests was conducted. Evidence was found that indicates the presence of rodents, carpet beetle, silverfish, moths and spiders. There ha spreviously been termite and wood borer activity in the attic, but this has been treated and is no longer active.

Regular spraying is done on an annual basis, but there is currently no IPM or regular pest monitoring being done. The collection needs a quarantine area for incoming objects to isolate pests. The kitchen and slab outbuilding has a large amount of pest activity and should be thoroughly cleaned. It is difficult to seal buildings constructed in the manner of the outbuilding and the cottage, but attempts could be made to block and seal some of the larger pest ingress points such as gaps between the kitchen wall and floor.

The Slab Outbuilding is a significant source of insect activity, and evidence of rodents, and other dead gecko and insect carcasses were found here. The slab outbuilding is thoroughly cleaned every 6 months, however it is difficult to keep pest free due to its unsealed construction. Most of the materials stored here are not susceptible to pest damage, but there is the concern that it could spread to other nearby collection buildings.

Rodent activity was also evident in the kitchen, and difficult to reach areas beneath kitchen furniture needs to be thoroughly cleaned so that infestations do not spread to susceptible collection items in the adjoining display rooms.

Geckoes are a problem, and the presence of a large predator pest is a concern. It is very difficult to control gecko populations in an unsealed building. There have also previously been problematic levels of ant activity, however ant cafes were installed 2 years ago, and there has been no infestation since that time.

The feather fans in the Vise House garage storage areas were recently decimated by insect infestation. Neighbouring susceptible collection items should be inspected and treated if necessary. Spot inspection of nearby boxes showed evidence of cockroach and silverfish droppings and grazing. Insect affected textiles can be sealed in plastic and then given low temperature treatment by freezing at below -20C for 1 week, thawed, refrozen for another week, then thawed and unwrapped for storage, or else treatment with Nitrogen gas by a Conservator.

Recommendations:

Develop an Integrated Pest Management (IPM) program, including:

- Continued use of sticky insect traps to monitor biological threats to the collection.
- Clean and vacuum difficult to reach areas to remove dead insects and other likely food sources.
- Thoroughly clean the slab outbuilding in difficult to reach areas
- Treat infested and at risk items with a suitable pest eradication method (freezing below -20C, or low oxygen – depending on the type of object).
- Remove unnecessary cardboard and boxes from the museum, and use polypropylene boxes as an alternative to cardboard.
- Quarantine all incoming objects until they have been inspected and treated for pest activity.
- Place rodent baits in the slab outbuilding and kitchen.
- Undertake regular pest treatments of the museum on a 6 monthly basis.
- Freeze or undertake anoxic treatment of pest affected objects
- Keep doors and windows closed to cut down on the number of airborne insects entering the building.
- Block and seal pest ingress points such as holes and gaps in walls in poorly sealed areas (where possible)
- Further investigate the extent of the pest outbreak from the feathered objects stored in the built in garage adjoining Vise house.

Pollutants

It is also important to keep the building closed as much as is possible, so as to minimize the ingress of pollutants from outside. Normal urban air contains many gases such as sulfur dioxide, hydrogen sulfide, nitrogen oxides, and ozone which can be absorbed by artifacts. Museum objects and building and furnishing materials such as carpets, wood, some textiles, paint coatings, concrete, and plastics also off-gas pollutants. These gases and pollutants can react with the moisture in an object or in the atmosphere to produce acids, causing deterioration. For example they can increase the rate of cellulosic deterioration, can induce metal corrosion, and can cause the weeping of glass and ceramic glazed objects.

Additionally, air contains a lot of particulate matter such as dust, ash, smoke, dirt, and mould spores. This is a significant risk because these particles accumulate on objects in a way that abrades, disfigures, and obscures their surfaces. The settling of these particles on objects encourages the increase of acidity and the settling of mould spores. The practice of regular cleaning at Pioneer Cottage Buderim is important because it prevents this from happening. Surfaces on open display at Pioneer Cottage Buderim are extremely well cleaned and dust free.

Some items not currently on display, such as textiles and paper based materials were stored individually wrapped or boxed in closed environments such as cupboards, plastic containers, plan cabinets and shelves. This effectively limits the amount of dust that could collect on them. However, in some cases it is necessary to separate collection objects from storage materials that are likely to off-gas. The wooden drawers inside bedrooms and wooden display case shelves will off-gas organic acids, hastening the deterioration of objects stored inside of them. Smaller collection items stored in acidic brown cardboard boxes are also at risk, as are textiles displayed on non archival Styrofoam head shaped mannequins. The attic rooms have a very strong wood odour, indicating the presence of organic acids. Care should be taken to ensure that collection materials are never in direct contact with attic walls.

Recommend:

- Building be kept closed as much as possible
- Line wooden drawers with Mylar and leave slightly open to allow air circulation.
- Place Mylar barriers beneath objects stored on shelves in wooden display cases.
- Periodically open display cases to allow air exchange of built up organic vapors.
- Remove incompatible display and support materials.

9. Housekeeping

General cleaning of spaces in Buderim cottage display areas is carried out weekly, and the level of cleanliness in the cottage is excellent. The Volunteers at Buderim Cottage are to be congratulated on their proactive, thorough, and meticulous approach to the cleaning and maintenance of the displays. They also hold an annual cleaning bee. A volunteer form Buderim Cottage recently attended preservation housekeeping training, and is well versed in the correct materials and equipment to use for cleaning. Additionally, a cleaner attends the cottage for an hour every week, and also one hour at Vise House every fortnight. Although there was some accumulation of dust and dirt underneath some furniture, and in very hard to reach places such as beneath furniture in the kitchen, the overall cleanliness of the cottage was excellent, and this is reflected in the low amount of mould growth, and what appears to be the lower incidence of insect pests.
There are high levels of dust in the Slab Outbuilding, but this is difficult to avoid given the unsealed construction of the building.

The Display building is often given a general clean, and a thorough clean is being progressively undertaken in nominated spaces, including the contents of drawers and cabinets, an under beds etc. Although there is no formalised cleaning schedule, the results are very noticeable. The next step would be to access the few remaining difficult to reach areas.

Dry brush vacuuming with a soft bristle brush is the preferred method to clean collection items, and this approach to cleaning of collection items is implemented by volunteers.

Recommendations:

- Continue with existing cleaning practices, incorporating recently gained knowledge of preservation housekeeping.
- Remove previously used commercial cleaning materials and solutions, and replace with conservation cleaning materials and solutions.
- Access remaining difficult to reach areas underneath and behind furniture, such as in the kitchen. This may require extra assistance to move furniture (only move large furniture when it is safe to do so without risk to the furniture itself).
- A vacuum with hepa filter should be used to vacuum.

10. Visitor Impact

The buildings are sturdy current displays remain fairly static. The downstairs is more prone to visitor impact than the upstairs areas, and numbers in the upstairs area is limited to 4 people at time. Other than the stairs, there is no evidence of any real impact being caused by visitors other than general wear and tear. There are an average of 30 visitors each week, with greater visitation during the summer months. Visitor statistics have been calculated are available in an internal report.

When large groups arrive by busload, such as tour groups and school children visiting on excursion there are some areas of the cottage that are prone to bottlenecks such as the bottom of the stairs. The stairs are also not safe for access by people with walkers or wheelchairs, and it is only safe for a limited amount of visitors to access the upstairs rooms at one time.

11. Disaster Preparedness

The Pioneer Cottage Buderim is located in a cyclone prone area, and this poses a risk to the collection. If a major cyclone event were to occur, there would likely be a couple of days warning. Contingencies exist that pre-empt the likely service interruptions and road closures. Other than the cyclone risk, the cottage is located in a relatively safe area, being off road and in a confined space. The plan also identifies "on call" list of organizations that would help with moving collection items at short notice.

An OH&S assessment is carried out every two months, by a member of the committee and a volunteer. There is a Disaster Preparedness Plan in place which identifies priority and “at risk” items for removal. All volunteers have received training and know their roles in the implementation of the plan should a disaster occur. A recent visit by Fire and Emergency services suggested mapping the location of objects that were evacuation priorities, and BHS is now in the process of doing this.

There is a number of fire extinguishers and evacuation maps in the cottage and in Vise House, and first aid kits available. There are also five disaster bins stored in the storage area at Vise House, and volunteers are familiar with their use.

Recommendations:

- Disaster kit contents to be updated regularly, and training to be regularly conducted.
- Disaster Planning Memorandum of Understanding with nearby historic societies to be negotiated to assist with disaster response and recovery.
- Prior identification of an emergency storage location and the sourcing of vehicles to transport collection materials offsite should be investigated as a contingency.
- Continue to map the location of objects that are evacuation priorities.

12. Training Needs Skills Assessment

There are 26 General Volunteers who attend Pioneer Cottage Buderim on a fortnightly or weekly basis, and 10 on the committee who area able to provide more time and expertise. More volunteers are required, especially those with the ability and time to commit to conservation and preservation activates. Different volunteers have different strengths and amounts of time to allocate to Conservation and Preservation activates.

The following types of skills held by the 36 volunteers:

- Large technology Object Restoration and building maintenance
- Gardening
- Carpentry
- History and research
- Graphic arts
- Tanya – Computer skills
- EHIVE Collection management database and documentation
- Preservation housekeeping, cleaning
- display and collection maintenance
- Embroidery, lacemaking
- Organisation and public speaking
- Financial management
- Knowledge of Conservation
- Business skills and social network

Some volunteer staff have been with the BHS for many years and have a wealth of experience and knowledge about the running of the BHS and Pioneer Cottage Buderim. They make up one of its greatest resources. Volunteers are the backbone of the BHS and without their dedication and enthusiasm, the Museum would not continue. Recruitment of more volunteers would benefit the BHS, however I would encourage short job descriptions to be written by the BHS and volunteers may then see a niche for themselves. Not everyone is suited or has the patience required to conservation activities, and volunteers should be monitored according to their skills and attitude towards conservation practices.

More collections based care volunteers are needed and one suggestion would be to email the Universities or TAFES where there may be students wishing to complete work experience. Museology, history or conservation students would be ideal.

Conservation best practice training by a Conservator for more of the volunteers is the most pressing training need, as well as assistance when identifying the conservation and display needs of the collection. There is some hesitancy by many volunteers to attend the many training opportunities offered by the SCC, and a more effective means of training would be to have a conservator attend on a regular basis and work alongside volunteers and demonstrate conservation practises relevant to the collections, display and storage projects that they are undertaking and leaving notes too support practises demonstrated.

There have previously been workshops and training presented in textile conservation, paper conservation, preservation housekeeping, disaster preparedness, metals conservation, collections management and database, and basic conservation principles.

Work on the database is currently focussing on filling in the gaps of things without provenance. Started accessioning in the 1980's with a manual accession registration system and catalogue cards and an old accession register. The EHIVE system is now in use. The EHIVE database provides an alternative to physical access to the collection which reduces collection wear from handling. The museum has digital images of all photographs on the database, and plans to have images of all objects on the database too. One staff member is knowledgeable in use of the database, and others are familiar to varying extents. The collections management group has also received training in cataloguing and entering the collection.

Recommendations

- Training in museum photography methods, purchase of a colour scale, completion of photography of all objects, and uploading of any remaining photos to the database.
- Engage more volunteers to assist in getting the remainder of the Collection catalogued
- Identify any collection based activities that could be done by volunteers while attending the front reception desk at Pioneer Cottage Buderim.
- Further conservation training in the preparation and care of items on display and in storage is required
- Further preventive conservation trading is required

AUTHORSHIP

Melanie Fihelly (PMAICCM, BAppSC Conservation of Cultural Materials, Certificate in Museum Studies) Objects Conservator provided this Preservation Needs Assessment for the Buderim Historical Society Inc.

The Significance Assessment Report by Josh Tarrant, is acknowledged as a reference document, as is the Management Plan for Pioneer Cottage and Vise House, Buderim, Queensland, by Tania Cleary.

Melanie consulted with and acknowledges the assistance Buderim Historical Society Volunteers, especially Ms Prue Cawley, Ms Jess and Mr David Woods for their valuable support, input, and provision of information.

An assessment of the Pioneer Cottage, Buderim site and Collection was carried out in December 2017 and May 2018. The Preservation Needs Assessment Template developed by AICCM, was followed as preferred by the Community Heritage Grants Programme.

The official website of Pioneer Cottage, Buderim: https://www.buderim.com/pioneer-cottage as well as various internal documents and reports of the BHS were also used as references.

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APPENDIX 1

SUITABLE MATERIALS	**Comments**
Coated Metal	Powder coated preferred to baked enamel
Glass	UV filtered (e.g. DMS Environlam)
Ceramic	
Paints (water based acrylic)	Wattyl Clean air (R) or Dulux Breath Easy (R)
Plastics	Polyethylene – e.g. Ethafoam, Softlon, Tapex Polypropylene – e.g. Corex Polyester – e.g. Mylar
Acrylic adhesives	
Cotton, linen and Parsilk fabric	Must have fixed dyes and be washed
Hoop pine plywood (exterior grade)	Must be sealed on all surfaces especially the end grain using one of the lacquers listed below. Allow 6 weeks to off gas
Neutral curing silicone sealant	Silicone sealants that do not emit acetic acid, e.g. Dow Corning 747
Seals	Use neoprene synthetic rubber or silicon
Two-part epoxy lacquer	
Clear lacquer (water based acrylic)	Wattyl Speed Clear (R) or Cabots Crystal Clear (R)
Acrylic sheeting	Perspex or Plexiglas
Polyester padding	Dacron (R)
Paper, tissue, cardboard, mount-board	Archival quality acid free, 100% rag
Silicone dots	3M Bump-on
Stainless steel wire	If in contact with object, cover with silicone tubing
Hotmelt adhesive	3M Jetmelt (R) for attaching supports together
Moistop and Marvelseal	Foil/plastic laminates for sealing internal surfaces of showcases to prevent off-gasing
UNSUITABLE MATERIALS	**Comments**
Woods, wood products	Wood (except hoop pine ply or marine ply),plywoods, MDF and chipboards emit organic acids and formaldehyde
PVA glue	Emits acetic acid
Oil paints	Emits corrosive gases and formic acids which off-gas for long periods
Alkyd, enamel or lead-based paints	Emit volatile gases

Cellulose acetate and nitrate adhesive and resins	Vapours turn to acetic and nitric acid
Polyurethane	Degrades quickly
Polyvinyl Chloride (PVC)	Emits corrosive chlorides
Wool and felt	Emit sulphur
Rubber	Emits sulphur
Acid curing silicone sealant	Emits acetic acid

Appendix L – BHS Cleaning and Housekeeping Policy (Draft)

Buderim Historical Society

Cleaning and Housekeeping Policy (Draft)

Keeping the Museum clean is an important part of museum management.

There are 4 main components to keeping the museum clean:

1. Museum space (floors, walls, curtains, blinds)
2. Display and storage areas (display cases and storage boxes)
3. Objects (cleaning them of dust and contamination)
4. Visitation areas (toilets, reception desk, seating for staff and visitors).

BHS has used the Community History South Australia *Cleaning in Museums* (2011) and the Housekeeping Manual for Bankfoot House prepared by the Sunshine Coast Council Cultural Heritage Services (2016) as our guide to the cleaning process. It explains why it is important to keep the museum space, displays and objects clean, why it is important to have a cleaning schedule as well as who is responsible for achieving this.

Cleaning of the collection is to be undertaken under supervision of a volunteer/s who has undergone training in cleaning of the specific types of materials. Expert conservator advice should be sought if any doubt about how/if an object should be cleaned.

Fragile objects such as the portraits of John and Jane Burnett (Dining Room), gladioli painted on glass and the mirror with leather surround (Parlour), are to be cleaned by the Curator.

The Housekeeping Log is used to record the areas of the museum cleaned and by whom. It includes general housekeeping of the buildings and the cleaning that has been undertaken by volunteers.

Each room of the building is to be cleaned on a rotating basis so that cleaning of each area (including the collection in that area) is conducted annually, or more frequently if the need arises.

Manual and electronic records of the above housekeeping activities are to be kept.

Cleaning equipment and pH neutral cleaners to be used by the cleaner are supplied and stored in the respective kitchens of both buildings.

If any evidence of pest infestation is found, the Curator is to be notified immediately.

See also:

Cleaning and Housekeeping Process

BHS Housekeeping Schedule & Log

Integrated Pest Management (IPM)

References:

History SA, Cleaning in Museums, HTSA, Adelaide, 2011. http://community.history.sa.gov.au/how-do-i/cleaning-museums and http://community.history.sa.gov.au/how-do-I/managing-pests-collection-integrated-pest-management-ipm.

Sunshine Coast Council Cultural Heritage Services, Housekeeping Manual for Bankfoot House, 2016.

https://en.wikipedia.org/wiki/Museum_integrated_pest_management#Common_museum_pests.

November,2018

Appendix M – BHS Disaster Preparedness Plan 2019

Buderim Historical Society (BHS)

Disaster Preparedness Plan

The compilation of this plan has been authorised by the BHS Management Committee. The Policy and Procedure Group comprising the President, Curator, Health and Safety officer and a Committee member prepared the plan for consultation with the volunteers who may assist in enacting the plan.

The aim of the plan is to protect the collection, the museum buildings and people working in and around these buildings by being prepared for a disaster of any size. It is to be used in part or in full, depending on the threat imposed. The plan should be read in conjunction with the BHS Collection Policy, Fire and Emergency Plan and Conservation Plan.

To prepare this document, the Heritage Collections Council's "Be prepared: Guidelines for small museums for writing a disaster preparedness plan", 2000 has been used.

The basic elements of disaster preparedness are disaster:

- prevention;
- preparation;
- response; and
- recovery.

These elements are based on understanding the risks that our museum is exposed to, alleviation of those risks and getting prepared for potential disasters.

A disaster can include: a roof leak, a pest invasion, a fire, a cyclone, or theft of a significant object/s from our collection.

1. Disaster Prevention

The nature of risks and threats to the building and collection that have been assessed from past accidents, disasters and emergencies as likely to occur are outlined in the following table:

Type of Disaster	Damage	Cause	Duration
Severe storm	Water damage	Leaking roof	2-3 days
Vandalism	Broken window	Break-in	1 day
Workmen	Broken window/s	Mowing	3hrs

The risks considered covered the major categories of:

- natural disasters;
- industrial and technological disasters failure;
- human disasters; and
- geographical risks.

In considering the risks that may threaten our building and collection, the following were taken into account:

- storage systems for the collection;
- the storage area;

- building construction or renovation;
- security systems;
- fire suppression systems;
- environmental conditions and controls;
- lighting, light and ultraviolet radiation;
- wet specimens that may contain inflammable liquids;
- historic objects that may contain unstable chemicals;
- dangerous chemicals stored on-site for use in the museum;
- exits and evacuation points; and
- condition of roof and guttering.

The following risks have been rated according to probability and impact on the collection:

Risk (event and consequence)	**Probability** High – Low (5-1)	**Impact** High – Low (5-1)	**Total** (number)	**Category of risk** (High 10 -8, Medium 7-4, Low 3-1)	**Prevention /Action to minimise risk**
Bushfire/ fire – Buildings and collection burnt	1	5	6	M	Fire & Emergency Plan, Disaster Preparedness Plan
Leak – (from roof) Objects water damaged	5	5	10	H	Repair ASAP Conservation Plan
Cyclone Windows and /or roof damaged and building contents water damaged	3	5	8	H	Disaster Preparedness Plan
Vandalism Windows/display cabinets smashed, graffiti	2	3	5	M	Security lights and cameras
Earthquake Structural collapse	1	1	2	L	Disaster Preparedness Plan
Bomb threat Museum temporarily closed	1	1	2	L	Disaster Preparedness Plan
Pest infestation Cockroaches, silverfish and geckos	3	4	7	M	Regular checking of storage boxes, cleaning, Health &Safety inspections

Actions to reduce or remove identified risks are listed above.

2. Disaster Preparation

To prepare for a disaster, a priority list for the Collection has been developed by the Curator and agreed to by the Management Committee. This list outlines the location of each object, security (eg locked cabinet, location of keys), and cataloguing information/documents. A floor plan with the location of these objects is available. Emergency Services have been familiarised with the location of these significant objects.

This list is to be kept separate from the Disaster Preparedness Plan.

The Disaster Response Team has been nominated for the most appropriate person for each role, taking into consideration not all key personnel may be available when the disaster occurs.

Liaise with the Sunshine Coast Council Cultural Heritage Team regarding what assistance would be available.

Disaster Response Team Roles

A list of personnel and an alternate for each role has been prepared for easy reference with the responsibilities of each role described briefly on the back of the list for easy reference:

Disaster Coordinator

Role: To oversee and coordinate activities during and after the disaster and to make the final decisions. Liaise with Emergency Services where necessary. To map out the Recovery Plan after assessing the situation. To be easily identified by wearing a high vis safety vest and name tag.

Volunteer Coordinator

Role: To coordinate volunteers, both members of BHS and the general public who may offer their services. It is the role of the volunteer coordinator to make sure:

- they are matched to suitable tasks and receive the proper training in that task (see Recovery Action Sheets— Disaster Recovery Plan)
- that they are cared for regarding food and drink (and sleep if necessary!)
- transport is provided, if necessary
- a timetable for volunteers is developed so they do not get overtired
- any other tasks as they arise.

Documenter

Role: To coordinate all the necessary activities and make sure that all the documentation is done according to the Recovery Plan. If time permits, to also note down major decisions that are made during the recovery process.

Financial adviser

Role: To assist with decisions with regard to the recovery (equipment hire, purchase of materials) as well as keep an account of monies spent or allocated and be able to advise on the financial picture. Notify the insurance company re the Collection and BWMCA re building repairs, insurance, etc.

Assessor

Role: To assess the condition of the collection and objects after the disaster in a variety of circumstances. To determine to what extent objects are damaged, prioritise objects that need attention, and decide what sort of salvage procedures are suitable. Liaise with Sunshine Coast Council Cultural Heritage team and Queensland Museum for advice and assistance.

Materials and Equipment Coordinator

Role: To source the supplies, materials and equipment needed for the disaster recovery. To ensure that Disaster boxes are stocked and regularly checked for disaster readiness, according to the list of contents. To coordinate helpers to collect items.

Media coordinator

Role: To liaise with the media to provide quotes, radio interviews etc and will be the only person the media will talk to from BHS.

Networker

Role: To ensure that communication lines are open (land lines, mobile phones etc), that the telephone tree has been activated and that all support networks and emergency services have been contacted. This person is the initial point of contact for those contacting the BHS and must work closely with the Coordinator.

Security person

Role: To ensure that the collection is safe, that no-one is on site who is not supposed to be there and that the site is not open to anyone off the street.

General helper

Role: To assist with collecting extra supplies, materials and equipment, food for workers, people to assist in the recovery, an extra pair of hands when needed.

Health & Safety person

Role: To be aware of health and safety issues while the response and recovery plan is in operation. Use the Safety Checklist as the initial response to ensure the site is safe to enter.

Identification of roles for personnel

A lanyard is available with a laminated name tag for each role position to identify the person responsible. These are stored in Disaster Box No1 in an easily accessible location.

A high vis vest for the Disaster Coordinator to be kept behind the main entrance door in Vise House.

Each person nominated has agreed that they are prepared to undertake the allocated role.

Once the assigned roles have been allocated and accepted, each member is fully briefed as to what their role entails. This may take many forms such as: attending the training workshops; preparing the Recovery Action Sheets; reading the Disaster Preparedness Plan from cover to cover; training their own group of volunteers.

Support and expertise from the Sunshine Coast Council Heritage team can be sought as well as assistance from members of other heritage museums.

Initial training of volunteers is to be undertaken with annual revision included with other planned emergency response training. All new volunteers are to read this plan as part of their induction.

3. Disaster Response Plan

The following sections cover the areas that are included in our response plan. See Disaster Response Flow Chart.

The initial responder will:

- Follow the Emergency Response Procedure for the particular threat or disaster. (See 3.1 below)
- Evacuate visitors and staff if necessary
- Call Emergency Services, if relevant, and Disaster Coordinator.
- Retrieve Priority List objects if possible.
- Hand over to the Disaster Coordinator and assist where necessary.

The Disaster Coordinator will:

- Liaise with Emergency Services where necessary.
- Work through the Safety Checklist to determine site stability.
- Ensure there is no source of ongoing damage. (turn off water, cover shelves etc.)
- Stabilise the situation as much as possible (turn off utilities, open windows). Use the Assess and Stabilise the Situation checklist.
- Use the contents of the Disaster Boxes to deal with any immediate problems.
- Assess the damage and the situation to determine the extent of the disaster. Use the Damage Checklist (1-6). Document all damage.
- Activate the Telephone Tree and call the rest of the Disaster Team, if required.
- Go through the Disaster Response Plan to check if anything has been forgotten.
- Sit down, review the situation, use the Disaster Recovery Plan to plan the recovery.

3.1 Emergency Responses:

General Evacuation Responses

If you are directed to evacuate the building (either by the Disaster Coordinator or Emergency Services):

- Remain calm.
- Turn off all hazardous operations.
- Follow instructions.
- Assist disabled people.
- Leave the area in an orderly fashion.
- Follow the established evacuation route.
- Move away from the building. Go directly to the Emergency Assembly Area and report to the Evacuation Coordinator for a 'head count'.
- Do not block the street, driveway or building entrances.
- Stay in the Emergency Assembly Area until instructed otherwise.

Fire

Refer to the BHS Fire and Evacuation Plans for Pioneer Cottage and Vise House.

Severe Storm

Usually if there is a severe storm there will be advanced warning:

- Contact Disaster Coordinator (David Wood Phone: 5477 0102 or mobile 0438 186 637)
- Listen to the local radio station for weather updates.
- Disconnect electrical equipment and appliances not in use.
- Secure outdoor items, where possible move them inside.
- If safe to do so check gutters and down pipes.
- Have battery powered equipment such as torches at hand.
- Only use the telephone for emergency calls.
- Tape across windows or attach plywood sheets.
- Put plastic sheeting over beds, shelves, large items, display cases.
- Backup software and data files.
- Volunteers and visitors are advised to shelter in Vise House until the storm has passed.
- Evacuate when instructed to do so.

Cyclone

Follow the instructions for a severe storm, in addition:

- Board up windows or protect them with storm shutters or tape. Try to seal around the windows.
- Limit access to the building to one door and secure the others.
- Try to seal any areas that would allow water access.
- Move collections away from the windows.
- Move to a designated shelter.
- Evacuate to a local shelter if ordered to do so by authorities.
- Remain indoors. Don't be fooled by the calmness of the 'eye' of the storm. Remember, the winds on the other side of the 'eye' will come from the opposite direction.

Bushfire

- If there is a bushfire warning, listen to the local radio station for updates.
- Prepare to evacuate upon direction.
- Follow the instructions of the local emergency authorities (SES, police, CFA etc.).
- Check battery powered equipment and back up power sources.
- If bushfire is approaching stay inside keeping windows and doors shut, block gaps from inside with wet towels.
- Fill buckets and sinks with water and prepare equipment for fighting small internal fires.
- Hose down external walls, roof and garden on the side facing the fire, if it is safe to do so.
- Remove combustible materials from around the building.
- Where possible move outdoor collection items inside or out of the fire's path.
- Attach a hose to an outside mains tap.
- Allow the bushfire to pass before exiting the building.

Bomb Threat

If you receive a bomb threat through a telephone call:

- Remain calm.
- Listen carefully. Be polite and show interest.
- Try to keep the caller talking to learn more information.
- If possible, write a note to a colleague to call the police or, as soon as the caller hangs up, notify them yourself.
- Complete the attached Bomb Threat Checklist immediately. Write down as much detail as you can remember.
- Follow the instructions of the police.
- Evacuate as directed.

3.2 Documentation

The following documents are to be stored in Disaster Box No1 as well as off site:

- Disaster Response Flow Chart
- Steps for Disaster Response
- Safety checklist
- Assessing and Stabilising the Situation Checklist
- Emergency Contact List – this list is to be kept updated and checked annually
- Damage checklists
- Disaster Response Telephone Tree
- Object Documentation List
- Disaster Recovery Volunteer Register

Disaster Box contents

A laminated list of items, contained in each of the Disaster boxes, is attached to the front of each box.

The contents of these boxes are checked against the laminated list on the front of the box annually (September) also if there is a threat of an impending disaster.

Collection Priority Objects List is to be kept in the Disaster Box No1 and with the Fire and Evacuation Plans.

- In the event of a fire, objects identified as Priority 1 on the Collection Priority List are to be removed, if safe to do so.

Disaster Preparedness Storage of the Collection

- In the event of impending cyclone, both Priority 1 and 2 objects are to be stored according to the Storage and Placement instructions for each room/area.

4. Disaster Recovery

Once the immediate response is complete and the building is declared safe, the Disaster Coordinator will:

- Assemble Disaster Response Team and prepare to sketch out the Recovery Plan.
- Review the situation and make sure you have all relevant information:
  - extent and type of damage
  - Priority List objects that were damaged
  - condition of the environment of the building (Damage checklist items 1 - 6)
  - general feeling about size of recovery operation (will outside help be required?)
- Ensure all damage is documented and photographed (Damage checklist items 7 – 19 and Object Documentation List).
- Determine what is needed for recovery — volunteers, material and equipment, outside expertise, space, freezer facilities.
- Organise the team — some to focus on environment, others on salvage. Refer to Disaster Recovery Volunteer Register.
- Modify (stabilise) the environment (remove wet material, open windows, fans)
- Specify which salvage procedures will be used and decide on the Team leaders for each procedure.
- Use the Action sheets and salvage procedures to set up the areas for salvage.
- Move into salvage operations-making sure all object movement and treatment are documented.
- Ensure adequate supplies are on hand and that you have all the help needed.
- Ensure all formal notifications have occurred — council, insurance company etc.
- Ensure all workers are well looked after. Celebrate milestones and keep everyone informed.

5. Disaster Preparedness Plan Review

Aim: The aim is to ensure that the Disaster Preparedness Plan is regularly reviewed and updated. This should happen after each disaster, minor or major; after each training session; and whenever anyone learns something new about Disaster Preparedness.

Strategies:

- Develop a de-briefing process.
- Review the plan and procedures after each training session.
- Regularly update the plan.
- Maintain a record book.

Date of Endorsement: 26 April 2019

BHS Management Meeting

Signed _____(President)

Print name: David Wood

Appendix N – BHS Health and Safety Plan 2019

BUDERIM HISTORICAL SOCIETY INC.

HEALTH AND SAFETY PLAN

Purpose:

To provide and maintain a safe environment for visitors, volunteers and staff who work or access the buildings and grounds of Pioneer Cottage (incl Slab Hut and Toilet Block) and Vise House.

Aim:

To provide details of safety measures to ensure, as far as is reasonably practicable, the health and safety of persons utilising these buildings and grounds.

Categories:

Personal Safety

Accident insurance is provided for volunteers and visitors. Lessees provide a copy of their organisation's Certificate of Currency.

Emergency (Police, Ambulance, Fire Brigade) contact number is readily accessible in case of suspicious /threatening behaviour, bomb threat, sudden severe illness or fire.

CCTV monitoring is operational.

Accident/incident notification procedure is documented and details:

- Who to contact
- Where to access an Accident/Incident form
- What to document
- Where to locate first aid equipment
- Management of incident and prevention strategies.

'No Smoking' signs are clearly visible at each entrance gate.

Fire Safety

Fire exits are marked.
Evacuation Signs and Diagrams are clearly visible.
Volunteers and staff know what to do in case of fire, able to locate fire extinguishers and operate same.
Equipment is checked by Fire Brigade 6 monthly.
Emergency Assembly area is clearly identified.
Please refer to separate Fire and Evacuation Plans for procedures for Pioneer Cottage and Vise House.

Evacuation procedure

Person on duty ensures all volunteers visitors and workers have removed themselves from the building and meet in the designated Emergency Assembly Area on the lawn outside the fence at the rear of Pioneer Cottage, between the Cottage and Vise House. In the event of a

bomb threat, do NOT evacuate to the Emergency Assembly Area, but to an alternate safe location decided by the person in charge. A 'Bomb threat' checklist is available near the telephones in both Pioneer Cottage and Vise House for volunteers' to use.

Electrical Safety

Safety switches are installed.

Extension cords, power boards are used only when necessary and preventive measures in place to avoid trips and falls.

Access to buildings

Gates, handicapped parking bay, ramp and doors are free from obstruction.

Garden hoses are stored to prevent a tripping hazard.

There are railings on all internal and external stairs and ramp.

Hazard/Risk identification and Management

Safety inspections are:

- carried out 4 monthly,
- documented, and
- outcomes reported to the Management Committee for resolution.

Volunteers are encouraged to identify hazards to ensure prompt remediation.

Disaster Preparedness Plan (eg fire, cyclone, severe storm)

Please refer to the BHS Disaster Preparedness Plan.

Hazardous substances

Are identified**,** listed and stored securely in a box attached to the Toilet Block wall.

Provision for Information /training

Individuals responsible for Health and Safety have undergone training.

Plan is read and signed by all volunteer staff annually. (See attached Sheet).

Fire and Evacuation training is conducted annually for volunteers.

May, 2015, Revised May, 2017, April, 2018, April 2019

BUDERIM HISTORICAL SOCIETY INC.

HEALTH AND SAFETY PLAN

VOLUNTEERS PLEASE SIGN THIS SHEET WHEN YOU HAVE READ ALL DOCUMENTS ASSOCIATED WITH THIS PLAN.

DATE	PRINT NAME	SIGNATURE

Appendix O – BHS Subfloor Area and Roof Cavity Condition Report

Report on inspection of roof cavity and underfloor area
Pioneer Cottage 5 Ballinger Crescent Buderim

On 2 August 2019 the President of Buderim Historical Society, David Wood carried out an inspection of the roof cavity and underfloor area of Pioneer Cottage to assess the condition of timbers and ascertain the source of roof leaks. Below are a number of photographs with observations. The roof was accessed by removing a section of wall panel in the upstairs easterly bedroom, which is normally held in place by one screw.

The camera used was a Canon DS126191 EOS digital camera.

Although there was evidence of past termite damage and repairs to rectify the damage, there was no evidence of any insect or vermin activity. Removal of some of the accumulated dust and old wasp nests by vacuum cleaner may assist in reducing dust levels in the rooms below. Apart from some minor staining from water, the condition of all of the timber was sound.

Figure 1 View looking west from the access hole. Note Zincalume roof and original close spaced battens from original shingle roof. Ceiling joists doubled up and bolted through to support original joist affected by termite attack

Figure 2 Ceiling joists added to support damaged joist. Ceiling rose appeared to have been installed when repairs were carried out

Figure 3 Detail of old termite attack on ceiling joist and new support structure.

Figure 4. Detail of Intersection of roof and internal bedroom wall. Note water staining from leak behind diagonal piece which abuts dormer window frame. Note also saw marks on timber from pit sawing or cutting with a gang saw in a mill.

Figure 5 Intersection of wall and ceiling below area in image above showing old termite debris

Figure 6. Looking east from Northern side of bedroom. Old Gramophone is adjacent to entry . Old ceiling rose (in poor condition) appears to be originally from the bedroom, presumably removed when roof joists were repaired. Area had been previously used for storage. Tripod removed during inspection

Figure 7 Ceiling rose detail

Figure 8 Old termite barriers, presumably removed when house re-stumped

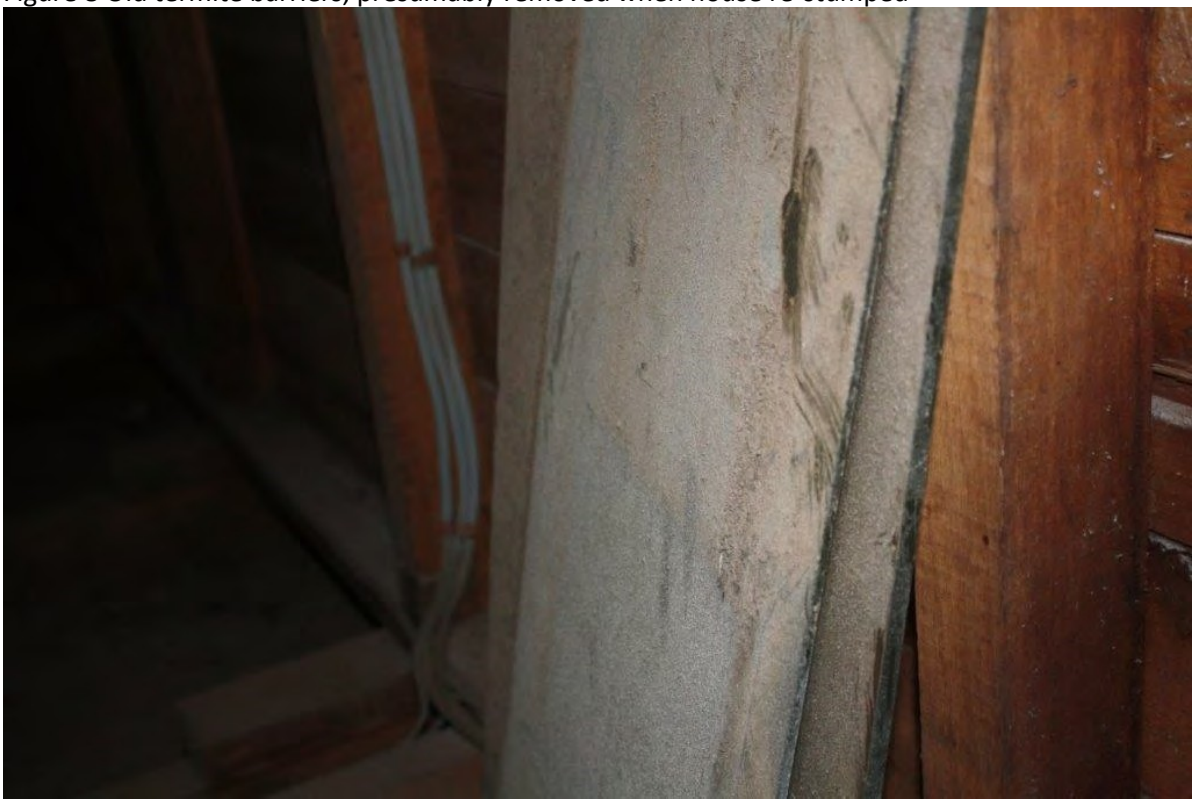

Figure 9 Sheets of old glass which appear to be the same age as the house, propped against eastern wall of bedroom

Figure 10 Southern wall of second bedroom, with chimney and roof detail. Parallel saw marks on studs and lining boards obvious.

Figure 11 South western corner of bedroom2 adjacent to dormer window. Note water stains on timber

Figure 12 Ceiling joist detail adjacent to western wall of bedroom under dormer window.

Figure 13 Bedroom 2 Lining Boards adjacent to western side of chimney

Figure 14 White Beech floorboards southern wall bedroom 2.

Figure 15 View under building from Southern verandah looking North, base of fireplace/chimney. Scrap piece of zincalume roofing iron.

Figure 16 View from same position to the North East

Figure 17 View from the same position looking North West

Figure 18 View looking West from South side of front steps, Fireplace/chimney on left

Figure 19 View from Eastern end of Northern verandah, looking South.

Figure 20 View from western end of Northern verandah, looking South, under bathroom French doors. Note two rows of wooden stumps.

Conclusion

The roof area was in good condition with further closer inspection required in the vicinity of the dormer windows to pinpoint leaks, which appear to come from faulty flashing, rather than any faults in the zincalume roof.

The underfloor area of the building appears to be sound and the only attention required would be to regularly check for litter which tends to accumulate from nearby building sites after being blown in by the wind.

David Wood

5 August 2019

Appendix P – BHS Collections Policy 2018-2023

Buderim Historical Society

COLLECTION POLICY

2018 - 2023

Table of Contents

Policy

Procedures

1.0 Policy Statement

The Buderim Historical Society (BHS) Collection Policy outlines the standards and practices applied to all collection assets to ensure that they are acquired, documented, maintained, utilised and disposed of within relevant National Standards for Museums and Galleries Version 1.5 2016.

2.0 Preamble:

2.1 Who we are:

The Buderim Historical Society was formed at a public meeting on 4th March 1966 to help in the restoration of Pioneer Cottage to a Historical Museum deeded to the Buderim War Memorial Community Association (BWMCA) by Sybil Vise. Pioneer Cottage was officially opened on 23rd September 1967. The BHS sought incorporation which was agreed to on 29th May 1990. On 11th March 1990, the Pioneer Cottage was listed under the National Heritage Building Protection Act which placed restrictions over development of the site. The Department of Environment and Science (DES) now exercises oversight of this Heritage site.

On the death of Sybil Vise in 2000 her home, Vise House, was bequeathed to the BWMCA. The BHS requested that this house be developed by the Society as a "History Resource Centre" for the Buderim Community. A formal Memorandum of Understanding and lease agreement was drawn up between the BWMCA and BHS and signed on 11th November 2005. Provision was made for the Buderim Foundation to sub-lease part of the redeveloped Vise House as its administration centre. This was completed in 2006. The memorandum of understanding has been replaced by a three-year lease agreement executed in October 2015.

2.2 Vision and Mission Statements

Our **vision** is to keep Buderim's history alive through conserving, preserving and researching its past.

Our **mission** is to conserve and preserve Buderim Pioneer history, artefacts and data for utilisation by our community and visitors, as a background resource to modern regional development and lifestyles.

3.0 Acquisitions

3.1 What we collect

BHS serves as a resource centre to assist identification, valuation, collection and preservation of Buderim and local history. Our aim is to conserve and preserve historical assets (museum buildings and artefacts), achievements, data and collections, with a focus on the period 1876 -1950's for objects in the collection; and for paper-based records, photographs, publications and historical digitised recordings to the present.

3.2 Thematic criteria

Collecting Buderim pioneer history, including collections, gardens and records of the Society is an ongoing process, especially interpretive commentary of significant objects and stories. These include:

- Early European settlement
- Life in Buderim in the late 19th and early 20th century
- Indigenous and South Sea Islander stories
- The Burnett family
- Agriculture on Buderim
- The Sybil Vise story

The types of objects/material for inclusion in the BHS collection are governed by the object's significance using the criteria outlined in *Significance 2.0: A guide to assessing the significance of collections (Russell & Winkworth, 2009).* These are:

- Historic
- Artistic or aesthetic
- Scientific or research
- Social or spiritual

Additionally, comparative criteria are used to evaluate the degree of significance including:

- Provenance
- Rarity or representativeness
- Condition or completeness
- Interpretive capacity

Some objects may not be acquired because they are too large, complex or sensitive to be accommodated within existing resources. As a general rule, we do not accept donations of the following:

- Prohibited weapons – eg ceremonial swords, bayonets, batons, daggers, crossbows, concealed weapons.
- Firearms
- Shipwreck material
- Large farm machinery

As part of the Sunshine Coast Council Heritage Group, the BHS aims to avoid overlap with collections of other museums in the Sunshine Coast region. The museum also recognises the cultural and spiritual connections with the local Gubbi Gubbi people and South Sea Islander descendants.

Our aim is to support education and research through providing a greater understanding of our past. To assist with this process, the BHS continues to progress the digitisation of documents, photographs and other outmoded recordings, as resources permit, to enable clients, regardless of location, to access and use a range of Buderim history content.

3.3 Selection Criteria for Acquisition

Acquisitions will comply with relevant local and national legislation and ethical standards.

Should the museum discover that it has inadvertently acquired an item of unsound legal provenance, BHS will seek alternate remedy and return the item to the donor.

Objects acquired by the Museum to be part of the permanent collection are usually by donation. Rarely, the object may be acquired by bequest, purchase or transfer.

The prospective donor completes a Donation Form, which includes a Gift Agreement, for each object. The Museum will not acquire conditional donations.

The Curator, after considering the acquisition criteria, recommends to the Management Committee whether to accept or decline the donation. The Management Committee using the same acquisition criteria is responsible for the final decision.

Once accepted or declined, the object is assigned a catalogue number and registered on Vernon systems eHive register, recording the accession date. A letter and a copy of the completed Donation form are sent to the donor advising them of the outcome. If the object is left at the Museum and is not required as a non-collection object (prop), the Committee will dispose of the object if not collected within 30 days from a date specified in the letter. The owner may arrange for the object to be returned to them instead.

The BHS Management Committee will consider the following criteria before approving acquisition of an object:

Relevance
The museum only collects objects that relate to the Museum's purpose and key collecting areas.
Significance
Priority is given to objects which are significant for their historic, aesthetic, scientific/research or social/spiritual value.
Provenance and Documentation
Priority will be given to objects where the history of the object is known, and associated documentation and support material can be provided.
Condition, intactness, integrity
The condition of the object must be taken into consideration when acquiring material. Badly damaged material will not normally be accepted into the collection.
Interpretive Potential
Objects that tell a story that adds to the interpretation of the museum themes will be prioritised.
Rarity
An object may be prioritised if it is a rare example of a particular kind of object.
Representativeness
Objects may be prioritised if they are excellent representative example of a particular type of object.
Duplications
Objects that duplicate objects already in the collection will not be accepted unless they are of superior condition and/or historic value. In such a case the duplicate may be considered for deaccessioning.
Legal Requirements
The Museum only accepts objects where the donor/vendor has legal title to the object.

3.4 Aboriginal artefacts

The *Aboriginal Cultural Heritage Act 2003* states that "a ***significant Aboriginal object*** is an object of particular significance to Aboriginal people because of either or both of the following:

- Aboriginal tradition
- the history, including contemporary history, of an Aboriginal party for an area."

The main purpose of this Act is to provide effective recognition, protection and conservation of Aboriginal cultural heritage.

Aboriginal cultural heritage is anything that is:

- a significant Aboriginal area in Queensland; or
- a significant Aboriginal object; or
- evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland.

The Committee acknowledges that in instances where the provenance of a certain Aboriginal artefact is unknown, advice will be sought from Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP).

In accordance with Museums Australia Guidelines, requests from Aboriginal and Torres Strait Islander Communities to return to them cultural items held by the Museum will be given serious consideration.

4.0 Registration and Accession

Objects acquired by BHS to be part of the permanent collection, or items on loan to the BHS for exhibitions are assigned a unique registration number with an associated record on the eHive database. Historically the primary record was established within a hand-written register.
Items held for education or research are recorded on a separate BHS file to the Collection database.

4.1 Documentation

The Museum aims to maintain an effective documentation system. Objects acquired are recorded initially on a Donation Form (Attachment 1).

The **Donation Form** is an official record which enables the Management Committee to:

- Assess the object's relevance to our collection
- Provide the necessary details to decide whether to accept the donation or not
- Inform the Management Committee of the procedure that the owner wishes to be followed if the object does not match our collection policy, and
- Provide a completed copy to the donor as a record of their donation.

Once the decision has been made to include the object in the BHS Collection, this information is transferred to the e-Hive database. If the object has been accepted into the collection, a letter of acceptance (Attachment 2) is sent to the donor together with a copy of the completed Donation Form, advising the outcome of the Management Committee's deliberations. If the donation is declined, a letter of non-acceptance (Attachment 3) is sent advising the donor of the outcome and how to arrange for return of the object.

e-Hive database

Vernon Systems provide an online manual with guidelines to input data. Enquiries can be made via email and web visitors are able to tag and comment on published records. Copyright licence for both eHive and the remainder of the BHS Collection is "All rights reserved".

Accession Register Supplementary information

For accessioned items, additional research subsequent to the acquisition process may result from discussion with the donor, donor's family or research. This information will be recorded on the Accession Register Supplementary Information Form (Attachment 4) which is signed by the person recording the information and dated, then entered on e-Hive.

5.0 Oral History

A History Talk/ Oral History Interview Agreement: Part A (Attachment 5) will be signed by the person interviewed or recorded presentation, which clearly states the purpose and intended uses of the interviews and what copyright provisions apply.

If the interviewee wishes to place restrictions on use of the History talk/ interview, other than what is stated on Part A, then Part B: Restrictions on Use of My History Talk/ Oral History (Attachment6) is to be completed and signed by both parties to the Agreement.

BHS abides by the *Guidelines of Ethical Practice of the Oral History Association of Australia*. This includes copyright.

6.0 Storage and Conservation

The Museum is committed to providing a balance between access to and safe preservation of the collection. Our aim is to achieve high standards of collection care and storage. BHS will continue to support the development of new or improved storage facilities to ensure adequate environmental conditions and storage capacity is available for all collection objects.

All museum staff should be aware of their responsibilities to preserve and protect the collection objects whether on display or in storage. Volunteers are responsible for ensuring collection objects are adequately protected against all agents of damage or deterioration, including fire, theft, vandalism and pests. Refer to separate "Cleaning Policy" which includes "Integrated pest management", "Housekeeping" and "Cleaning of the Collection".

Storage areas must remain clean, secure and sealed against the weather.
Temperature and relative humidity should be kept as stable as possible.
Access to storage areas is to be controlled.
Ultra violet light should be excluded from storage areas. When storage areas are not in use, lights must be turned off.
Archival quality materials should be used for all significant material.
Storage areas must be regularly checked for pests and other problems through integrated pest management.
Objects are not to be stored on the floor.
Untrained personnel should never attempt to clean, treat or restore museum objects.
Disaster preparedness is outlined in the Disaster Plan. Disaster storage equipment is clearly labelled and checked annually.

7.0 Access

The BHS Collection is accessible to the public through regular opening hours and by appointment with the Curator. Images of collection objects are accessible through the BHS website link to eHive.

7.1 Loan Procedures

Permanent and long-term loans will not be accepted by the Museum.
The BHS will lend and borrow material to help meet its purpose.
BHS holds separate forms for outward loans and condition reports.
All objects on loan from BHS should have a condition report completed before dispatch and on return of the object.
The maximum loan period is 12 months. Applications for extension of this period must be made prior to the loan expiry date.

7.1.1 Inward Loans

Inward (incoming) loans shall only be accepted for specific exhibitions or research and for fixed periods of time.
Inward loans are recorded in a separate Loans Register and on eHive.
An inward loan form (provided by the lending organisation) should include the period of the loan and conditions of the loan.
The BHS is responsible for insurance of the object/s from departure from the lending organisation to its return.
A representative of both BHS and the lender are required to sign the agreed loan form. Each party will hold a copy of this agreement. This form will record conditions of the loan, the period of the loan, a photograph of the object on receipt and an accompanying completed 'Standard Condition Report -Objects" form.
BHS agrees to exercise the same care with respect to loans as it does for its own collection.
Loans are to remain in the possession of the BHS for the time specified on the form.

On departure, the objects current condition is to be documented, who it is examined by and any change to condition noted.
The BHS can request to renew loans if required. Documentation recording the renewal must be signed by the BHS Curator and the lender.

7.1.2 Outward Loans

BHS will lend objects to other museums and organisations holding collections. It will not lend to private collectors.
A BHS Outward (outgoing) Loan Agreement form (Attachment 7) will include the period of the loan and the conditions of the loan.
A representative of the borrowing institution and the BHS Curator are required to sign two outward loan agreement forms as well as a completed Standard Condition Report - Objects form (Attachment 8) for each object on loan. Each party will hold a copy of this agreement. This form will record the condition of the loan and the period of the loan.
The borrower must exercise care in the handling, storage and display of the loan object and must be prepared to meet the conditions in the loan agreement.
Insurance cover will be provided by the borrower covering the time the object is removed from its usual location until return of the object.
The borrower will provide a secure display and/or storage area.
The maximum loan period is 12 months. Applications for extension of this period must be made prior to the loan expiry date.
Objects cannot be treated or altered in any way without written permission of BHS.
Loans will remain in the possession of the borrower until returned to the museum.
The Outward loan will be recorded on the eHive Loans Register and the loan agreement form filed in the paper-based object file.

8.0 Resource, education and secondary collections

An object not considered appropriate for formal acquisition to the Collection may be used for display, education or resource purposes.
This includes objects that:

- do not meet the Collection Policy selection criteria for acquisition
- have been deaccessioned from the Collection.
- may be used as a 'hands on' or 'extra' in an exhibition or program
- will not be stored with accessioned objects
- can be disposed of at any time without following the guidelines set out in the Deaccession and Disposal Policy.

These objects are recorded on a spreadsheet file on the BHS computer and in the BHS 'cloud'.

9.0 Deaccession and Disposal

Deaccessioning is the administrative process of removing an object from the collection.

9.1 Criteria for deaccessioning

An object can be deaccessioned from the BHS collection if:

- It does not comply with the current BHS collection policy
- It is damaged beyond repair
- It poses a danger or health risk
- The conservation and storage costs for it are beyond the means of the BHS
- It is a lesser quality duplicate of an object the museum already owns.

Note: If this object is significant, then it is retained and if it is necessary to deaccession for space reason etc, then the better-quality object with no significance is removed

- It will be more useful as a non-core collection object used by the Museum as display props or for 'hands- on' activities
- It is proved to be a fake
- It lacks any supporting information to enable proper identification or to establish its relevance to the collection
- A substantial request for the return of the object to its original owner/donor is received. This could be the return of sacred material to indigenous peoples or possibly an object/s that belong to another BWMCA affiliate who has stored the object/s with BHS as they do not have a storage area suitable for the object at present.

The Deaccession form to be completed is included as Attachment 9.

10.0 Winding-up Procedures

In the event that the Museum is placed in the situation of winding-up and disposing of the collection, Item 32 of the BHS Constitution "Distribution of Assets" will be followed. The Collection will be disposed of according to recognised museum ethics - ICOM Code of Ethics for Museums (2013).

References

Aboriginal Cultural Heritage Act 2003 (Queensland)

Buderim Historical Society Strategic Plan 2018 -23

Guidelines of Ethical Practice of the Oral History Association of Australia

International Code of Ethics for Museums 2013

MAP Collection Policy Template. Museums Australia (Victoria) 2014. www.mavic.asn.au

Museums Australia (Victoria) Oral History Kit (2014) www.mavic.asn.au

National Standards for Australian Museums and Galleries Version 1.5 September 2016 Principle C1

Otago Museum Collection Policy 2015-2020

Significance Assessment 2.0: a guide to assessing the significance of collections. Russell, R. & K. Winkworth 2009. www.arts.gov.au

The Small Museums Cataloguing Manual: a guide to cataloguing object and image collections. 4th Ed Museums Australia Victoria. 2009.

Attachments:

1. Donation Form
2. Acceptance letter to Donor
3. Non-acceptance letter to Donor
4. Accession Register Supplementary Information Form
5. History Talk/ Oral History Interview Agreement: Part A
6. History Talk/ Oral History Interview Agreement: Part B
7. Outward Loan Agreement Form
8. Standard Condition Report – Objects
9. Deaccession Form

Buderim Historical Society

Collection Policy – Procedures

1.0 Guidelines for acquiring and processing collection material.

See Accessioning Procedure flow chart (Attachment 10).

1.1 Donation process

Each object donated requires its own record. A Donation Form is to be completed by the donor. These are kept at the desk of Pioneer Cottage or in a file in the Vise House administration office. This Donation Form is also available on the BHS website to enable the donor to provide this with the object at time of donation.

The fields of information (see description of requirements below) that need to be recorded on the Donor Form are:

- Object name
- Catalogue number (Office use only)
- Physical description
- Type of material
- Measurements (dimensions)
- Condition
- Inscriptions and/or marks
- Mounting /framing
- Related objects
- Maker
- Date of manufacture
- History (provenance) where it was used, by whom, association of object and donor
- Significance (reason for collecting)
- Any supporting information

1.2 Guideline for the person receiving the donation

See Process for Visitor Guides: Donation of an object to our Collection Flow chart (Attachment 11).

- If the donation is a **set of related objects** – e.g. teaset or writing set, only the one form is to be used but the number of items in the set are to be recorded e.g. four cups, four saucers etc.
- This procedure is to be followed for the **collection of letters,** when the number of letters in the gift are noted and the writers name recorded. However, if different people write the letters, each person's work will require a separate form.
- If the donation is a **newspaper or magazine article**, date and the name of the newspaper or magazine from which it was taken is to be recorded.
- If the gift is **photographs**, the number of photographs, the names of the people pictured, the location where it was taken and when are to be recorded. If possible, this information is recorded using a 2B pencil on the back of the photo. **A biro is not be used to write on the reverse of a photograph.**

This form includes a **Gift Agreement** whereby the donor:

- "Unconditionally donates to the Buderim Historical Society (BHS) the object without restriction as to its use or disposition by BHS and, in the case of copyright or intellectual property, makes a gift to BHS of such copyright and intellectual rights in and to the same.

- Holds full and uncontested legal ownership in and to the said object and, where applicable, the said copyright and/or intellectual rights.
- Acknowledges that BHS may deal with the said object in any way it may see fit, including its display in the museum, its return to the donor/s, its placement with a more appropriate museum or its disposition in any other manner."

When the form is completed, the **person collecting the information** is to sign and date the Donation form.

Once completed, the form and object will be assessed by the Curator. The donor will be contacted by the Curator once a decision has been made about the object's suitability for inclusion in our collection.

Once accepted, an accession number will be attached to the object and the object is to be catalogued on eHive.

2.0 Cataloguing system

The information about an object from the Donor Form is transferred to an on-line cataloguing system, Vernon System's eHive database. This form will contain notes or information from the donor, preferably written by the donor. It may also include notes from conversations with people who know about the object or this type of object.

For collection objects, both a database and a paper-based document file will be kept. This object file should never leave the Museum.

For non-collection objects held for interpretive purposes, all relevant information regarding the object will be recorded in a separate spreadsheet as well a paper-based file. This will include the location of the object on display or in storage.

For accessioned items, this may involve additional research subsequent to the acquisition process. This information will be recorded on the Accession Register Supplementary Information Form which is signed by the person recording the information and dated.

The Curator and Assistant Curator are responsible for the documentation and records relating to the collection objects and their management, as well as documentation and records relating to outward and inward loans. Documentation surrounding the acquisition process, condition monitoring, conservation, access, publication and a record of use of the object will form part of the object's eHive record.

The Collection is documented and classified using scientific nomenclature. *"Historic collections classifications scheme for small museums" Patricia Summerfield* and *"The Small Museums Cataloguing Manual: a guide to cataloguing object and image collections." 4th Ed Museums Australia Victoria. 2009"* were used to guide this process which has been slightly modified to the eHive database system. This is outlined in more detail below.

2.1 Cataloguing collection objects

Cataloguing is a more detailed process than accession registration. Cataloguing, a particular skill, is only to be undertaken by persons who have undertaken training. Cataloguing will be supervised by the BHS Curator.

It is important to keep an efficient record information system as it facilitates access to the collection, allowing the museum to:

- Easily respond to public enquiries;
- Easily conduct research into individual or groups of items;
- Control the scope of the collection for collection policy purposes;
- To avoid unnecessary handling of the collection, therefore better conserving the condition of the collection
- Plan exhibitions and themes.

In addition, the following are to be included in the documentation of the object on the eHive database:

- Subject areas - tertiary, secondary, primary (key words)
- Photograph of the object – "Accession Photos" – more than one photo of an object can be inserted into eHive in order to show different angles/aspect of an object. The photos have exactly the same catalogue number as the Object. If there is more than one photo the numbering would be eg 2018.001, 2018.001(2).
- Catalogued by
- Date catalogued
- Location of the object and paper-based file.

PDF copies can be inserted into an Object file in eHive, eg a copy of Joyce Burnett's exam results.

To promote good practice in museum documentation, the standard pieces of information about an object that should be recorded are as follows:

2.1.1 Donor details
On the paper-based form, document the full name, address and phone number of the donor. If the object has been bought for the museum's collection, cross out "Donor Name" and put in "Purchased From" and write in the name/company's name and contact person, address and phone number. On the eHive system, under the TAB "Acquisition", there is an allotted section for the "Donor" and another for details of "Purchase".

2.1.2 Catalogue registration number
Each item is allocated a unique number. These numbers are sequential (i.e. they follow each other) with a 4-numeral prefix, a dot, then 3 numbers e.g. 2018.001 or 0001.000. A new number sequence starts each year.

For an Object that has 2 or more parts (e.g. a cup and saucer), the eHive system uses the Object number with -1, -2 eg the catalogue number for the 2 Puttees donated by Grace McLuskie-Higgs are 2018.003-1 and 2018.003-2.

The registration number is marked on each object; this number links the object with its accompanying documentation.

The **Accession Register Diary** is located in the catalogue filing drawer. It has the list of Registration Numbers. The next free number for accessioning can be found in this diary. For each accession, write a one-line description of the object beside the number, and add name of person making the entry and the date of accession.

2.1.3 Object name
A brief one-line description or name of the object, using, where possible, standard terms for the object,
e.g. **saw, tenon**; **cup and saucer, plastic**; NOT **tenon saw** or **plastic cup and saucer**.
The brief description should include any distinguishing feature such as the brand name, manufacturer's name, material, and approximate date, or exact date if known:
e.g. **cup and saucer, plastic, Warne & Co, Australia, c. 1930 - 1935;**
e.g. **dress, jacket and belt, silk, metal, plastic, Christian Dior, France, 1956;**
e.g. **saw, tenon, steel and wood, Ward & Payne, c.1900, taped handle.**

This one line is later copied onto eHive database; in order to recognise one item from similar objects, it is important to include these details in the one-line description.

2.1.4 Classification
Each object is classified according to the categories found in the Object Classification System (*Historical collections classifications scheme for small museums* by Patricia Summerfield).

- Search through the **tertiary** headings for the category which best describes the object to be classified. This is another name for Name/Title.
- Once this heading has been found, search through the **secondary** headings to find a suitable category.
- Finally locate the **primary** headings for the broadest category suited to the object being classified.

On eHive, Name/Title is used for the **tertiary** heading. The **primary** and **secondary** categories are listed together and are selected from a "Drop Down" arrow.

This helps to convey the hierarchical nature of the Classification system.

A record of **location** is part of the history of the object once it is in the museum; it informs where the object has been stored or displayed. The location is recorded on eHive only, not on the photo or paper-based file.

2.1.5 Physical description

On eHive, the "Brief Description Box" under the "Name/Title" box allows just a brief description which can be copied into the "Public Box." There is another box under the "Acquisition" tab for a more detailed description.

The description should allow the reader to visualise/recognise the object that is described. Describe in detail the shape and appearance of the object, features such as decorative patterns, colours, inscriptions, what materials are used where, and if present, manufacturer's marks. Details of marks can be drawn. If the description is long, use the reverse of the sheet or staple an extra sheet of paper to the data object sheet. If in doubt as to whether or not to include a piece of information - include it.

Glossaries of descriptive terms, production methods and materials are provided as appendices in Museums Australia, Victoria 'The Small Museums Cataloguing Manual: a guide to cataloguing object and image collections" and the publication by Patricia Summerfield "Historical collections classifications scheme for small museums".

2.1.6 Measurements

Dimensions are always recorded in centimetres. Record in centimetres the height (H), width (W) and depth or length (D/L) of the object. If the object consists of several parts, record the measurements of all parts. If the object is circular, measure the circumference or diameter. For small objects, measure to the nearest millimetre but for larger objects measure up to the nearest centimetre. If it is necessary to note down imperial measurements (e.g. swords are always measured in inches), do so in brackets below the measurements in centimetres.

2.1.7 Condition on receipt of object

This is largely a damage report. Record any specific defect (e.g. crack, broken handle, tears, etc.), or deterioration (e.g. rust, surface, corrosion etc.). Be specific in recording the location of such damage. Avoid terms like "good, fair, bad" as they are too vague.

2..1.8 Accessioned Photographs

Photographs are to be numbered on the back in 2B pencil. A digital copy of the photograph is stored on the BHS computer and in the BHS 'cloud'. There is a separate digital folder for each year of catalogued photographs. Entry and retrieval of photographs for reproduction is undertaken by the Curator. Requests for photographs in the collection must be made to the Curator.
Photographs of objects in the collection are only kept in a digitised format.

2.1.9 When & where made

Enter the date if known. If uncertain of the exact date, enter an approximate date, e.g. c.1900; c.1890 - 1910 ("c." stands for "circa", which means "about"). Doubt about the date can also be indicated by a question mark after the date. Often the date can be inferred by patent details on the object, information in an instruction booklet, or from a reference book. The best reference source is the donor.

Quite often it is not possible to tell where an object was made. Again, patent details, instruction booklets, web-based resources and reference books can provide useful information. Curators at the state museum can be helpful in assisting with dating and identification. Doubt about place of manufacture can be indicated by a question mark after the country/state. If there is no indication at all of a place of manufacture, leave the space blank; research at a later date may enable this information to be added.

2.1.10 When & where used

Enter here any date/s supplied by the donor as to when the object was in use. Sometimes objects were used over a period of time by different members of a family, for different purposes, so enter these details. If there is doubt, use a question mark to indicate this. Information included by the donor on the donor form should assist in completing this section.

2.1.11 History/provenance

Write down any history or information that is known about the object. The donor form, donor, or reference books and newspapers are the main source for the history or provenance of the object. The more information obtained and recorded about an object, the better. Sometimes there will be very little information at first; it may be months or years before information about the object comes to light.

If a specific reference to that type of object in a reference book, auction catalogue or exhibition catalogue, or website is found note down the author, book title, publisher and date published, and page number, e.g. Geoffrey A. Godden, Encyclopaedia of British Pottery and Porcelain Marks (Barrie & Jenkins, London 1975), p.100.

2.1.12 Location

The location of the object in the museum e.g. Storeroom 2, Vise House, Box 25, the date the object was placed in that location and the cataloguer's name are recorded for validation purposes.

Photographs located in albums in Store Room 1, Vise House are catalogued with an index of photographs in each album. These are stored as TIF files in the 'cloud' and on an external hard drive.

Back-up copies of the BHS data files is kept in the fire proof cabinet in Store Room 2.

2.2 Techniques for Numbering of Objects

Recommended methods for catalogue numbering for particular types of collection objects, eg machinery items are to be numbered using card tags, are outlined below:
Inappropriate numbering can damage collection items. Remember, if in doubt, ask the Curator.

2.2.1 Glass:

If possible, the mark should be placed at the rear, near the base. Lids can be numbered on the inside of the rim.

- Using white spirit or petroleum spirit on a slightly moistened cotton bud, swab the surface gently. Allow to dry for one minute
- Apply a base coat (see note)
- Write number using waterproof drawing ink (white lettering is to be placed on clear glass items in order to minimise visibility whilst on display)
- Apply top coat (see note).

2.2.2 Leather and Fur:

Depending on the type of article, it is possible to use either of the methods listed below.

Acid-free tags or woven cotton tape loops can be numbered and tied onto the article.

Direct labelling should be on the inside surface only in an inconspicuous place.
To mark the leather or fur item

- Use ethanol or uncoloured methylated spirit on a slightly moistened cotton bud, swab the surface gently. Allow to dry for one minute.
- Brush on a base coat, allow to dry (see note)
- Use a non-clogging waterproof drawing ink to write the number on the base
- Brush a top coat and allow to dry for half an hour (see note).

2.2.3 Metal:
Select an area on the object that is unobtrusive. Painted or decorated areas should be avoided, and flat corrosion-free area selected if possible. The numbers of large items should be accessible without lifting. In composite items, the sub number of a component should also be visible without dismantling the item if this is possible.

To mark the metal item

- Use ethanol or uncoloured methylated spirit on a slightly moistened cotton bud, swab the surface gently. Allow to dry for one minute.
- Brush on a base coat, allow to dry (see note)
- Use a non-clogging waterproof drawing ink to write the number on the base
- Brush a top coat and allow to dry for half an hour (see note).

2.2.4 Paintings on canvas:

Framed - Paintings should be marked on the back of the frame with permanent ink
Stretched – Paintings should be marked on the part of the canvas that has been folded to the back of the stretcher with permanent ink.
Loose – Paintings should be marked on the back of the painting at the very edge of the canvas with permanent ink.

2.2.5 Paper:
Books:
As for all paper a **soft pencil** (2B) should be used. The number/code should be placed on the inside front cover at the bottom, near the spine. If the covers and end papers are marbled or there are detailed or important art works, then the first available plain page should be numbered.

Scrapbooks, sketchbooks etc should be numbered on several pages as they are often cheaply bound and pages may separate from the binding. All loose papers or sheets should be numbered.

Prints and Drawings:
Soft pencil – a 2B pencil is good - on the edge of the back of the paper. Don't press down when writing because this can leave grooves in the paper.

Do not use biros, other ink pens and markers on paper items. Many of these inks, particularly felt-tip pen inks, can spread and cause unsightly staining.

Photographs:

When it is necessary to label a photographic print, write in **soft pencil** – a 2B pencil is good – on the edge of the back of the print. Don't apply pressure because this can leave indents in the photograph and can fracture the emulsion.

Sometimes it is necessary to label negatives. This must be done with extreme care. It is best to use permanent ink. The information should be recorded on the very edge of the negative, outside the image area. It is very difficult to write on the shiny side of the negative, so write on the duller side: this is the emulsion side of the film.

Stamps:
Stamps should not be numbered directly. Mounted stamps are numbered on the back of the mount. Storage envelopes in which stamps are stored should also be marked. There should be thorough photo documentation of each item.

2.2.6 Plastic and Vinyl:
Acid free tags or woven cotton tapes can be numbered and tied on to the article.

Alternatively, numbers on plastics or vinyl collection items should be placed towards the base and to the rear.

- To pre-clean, brush the surface gently with a clean, soft, sable brush.
- Brush on base coat. To write on the item use either black or white waterproof drawing ink (see below)
- Apply a top coat (see note).

2.2.7 Textiles:

The catalogue number should be written on cotton tape in permanent ink.

Stitch the cotton tape on to the textile with only one or two stitches at each end, using fine white cotton thread.
It is helpful to stitch the number in the same place if possible for each type of textile. This way, you will know exactly where to look for the label and you will avoid excessive handling while searching for the number.
For example:

- For flat textiles, always stitch the label at the bottom left-hand corner at the back of the textile; and
- For costume, always stitch the label at the back of the collar on the inside of the garment.

For lacey objects, use small white acid-free tags with cotton string to attach.

It may not be possible to stitch a label to all items, for example, fans, shoes or hats. Label these items with acid-free cardboard tags with string attached.

NEVER place adhesive labels directly on textiles – the adhesive will stain the fibres, make them brittle and attract vermin.

It is very useful to clearly label the outside of all storage boxes and rollers. This allows you to see what item is in each package without having to handle the textile.

WOOD:

Numbers on wooden collection items should be placed towards the base and to the rear.

- To pre-clean, brush the surface gently with a clean, soft, sable brush.
- Brush on base coat. To write on the item use either black or white waterproof drawing ink (see below)
- Apply a top coat (see note).

NOTE:

DIRECTIONS FOR BASE AND TOP COATS:

Base Coat:

The base coat provides a well-sealed surface so that numbering will not be directly on the item. Clear nail polish will provide a well-sealed surface so that numbering will not be directly on the item.

Top Coat:

Clear nail polish can be used as the top coat. The top coat is a protective, sealing coat which should ensure long-term survival of the lettering.

Note:

Write the catalogue number on to the nail polish with one of the following: nib or fountain pen with waterproof India ink; Rotring drafting pens with Rotring technical drawing white or black inks; Artline Drawing System 0.1 or calligraphy felt tip pens.

4.0 Deaccession procedure

See Deaccessioning flow chart (Attachment 12).

The object for removal from the collection will be recommended to the BHS Management Committee by the Curator for consideration with close reference to the above criteria. The Management Committee makes the final decision regarding deaccession and disposal. This is recorded on a Deaccession Form and in the minutes of the meeting. A 12 month "cooling off" period may be required if there is not consensus among Committee members regarding the significance of the deaccessioned object. In cases where there is no disagreement, or the item is in poor condition, the 12- month review period can be waived.

The eHive record of the deaccessioned object and the documentation related to the deaccessioning process will be permanently retained by the BHS. A hard copy of the Deaccession Form is kept in a special folder. Also, a copy is attached to the original Donor Form. The deaccessioning of an object on eHive is recorded in a window under the Administration Tab.

Staff, volunteers, committee members and their families are prohibited from purchasing or otherwise obtaining a deaccessioned object.

Any funds acquired from the sale of the deaccessioned object should be used for acquisitions or care of the collection.

3.1 Disposal procedures

In priority order the object must be:

Returned to the donor family. If after a thorough search this is impossible, the object should be:

- Transferred to another appropriate institution
- Sold by public auction, where appropriate
- Used as an educative/ interpretive tool
- Destroyed or recycled if appropriate.

Review of Collection Policy and Procedure

The BHS Collection Policy and Procedure will be reviewed every 5 years

Date of next review: 2023

Date of Endorsement: 23 November 2018

BHS Management Meeting

Signed _____(President)

Print name: David Wood

References

Historical collections classifications scheme for small museums Patricia Summerfield

Numbering Helpsheet. MAP 2002

The Small Museums Cataloguing Manual: a guide to cataloguing object and image collections. 4th Ed Museums Australia Victoria. 2009.

Attachments (Procedures):

10. Accession Process Flow Chart
11. Process for Visitor Guides: Donation of an object to our Collection Flow Chart
12. Deaccessioning Procedure Flow Chart