



# Caring for war memorials

*A guide to help custodians conserve the heritage values of Queensland's monumental war memorials.*

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

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We also acknowledge as an important source, the booklet *Lest We Forget: A guide to the conservation of war memorials*, by Judith Mackay and Richard Allom (Returned Services League of Australia, 1984).

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The Department of Environment and Heritage Protection (EHP) provides this guideline as general, best practice advice for conserving places of heritage value. It is not exhaustive and should not be used to legitimise works carried out without the necessary approvals.

For information about work that may be done without application, refer to the General Exemption Certificate: Queensland Heritage Places and General Exemption Certificate: War Memorials, available on EHP's website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au)

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## Introduction

Across the state, more than 1300 war memorials commemorate Queensland's involvement in conflicts dating from the Boer War (1899–1902) to the present day. The Queensland Heritage Register lists approximately 150 of these, recognising their historical significance to Queensland.

With around 57,000 Queenslanders serving in World War I alone, few communities have been left untouched by war. Indeed, most Queensland towns have a monument to those who served in war. These tangible symbols of public mourning and reflection hold deep significance for countless families who remember a lost loved one or an ancestor. As the Australian Government did not sanction bringing home the remains of war dead after the two world wars these sites are similar to a grave site for many Australians who remember departed ancestors and family members.

Their sacred significance places a privileged responsibility in the hands of those who care for Queensland's war memorials. That responsibility begins with understanding why their memorial is significant, and the level of their conservation skills and knowledge—obtaining advice where needed from specialists before arranging major cleaning or repairs.

In most cases, the responsibility of caring for war memorials falls to local governments. However many dedicated members of the community such as volunteers and Returned Services League (RSL) members also care for local war memorials. Whatever their role, these custodians share one chief responsibility—to conserve the original fabric of the memorial for the benefit of future generations.

Custodians who carefully, regularly maintain their community's memorial can prevent major problems and extend its life. Conversely, well-meaning carers applying incorrect maintenance methods can cause permanent damage.

This guideline, *Caring for war memorials*, provides custodians with advice on how to care for war memorials so that these significant sites of remembrance retain their heritage values, and continue in the role and form their creators originally intended.

This guideline focuses on monumental memorials and honour boards. The Department of Environment and Heritage Protection (EHP) website ([www.ehp.qld.gov.au](http://www.ehp.qld.gov.au)) provides guides and technical notes which are relevant to caring for other types of memorials such as avenues, halls, windows and parks. In this guideline the term 'memorial' refers to both monuments and honour boards.

This guideline describes the important elements of memorials, and best practice maintenance and cleaning—as well as their common problems and how to repair them. It outlines, in **Part A: The process**, the essential steps in caring for war memorials, and guides users through each step:

- Step 1: Understand your community's memorial
- Step 2: Inspect and maintain the memorial
- Step 3: Decide on essential repairs or changes
- Step 4: Plan, arrange and record needed repairs or changes

These steps are a simplified version of The Burra Charter Process which comprehensively outlines the steps in planning for and managing a place of cultural heritage significance.

Then, **Part B: The methods** sets out appropriate conservation methods that custodians need to know when arranging repairs and changes to a memorial. It also offers some important steps for custodians on safely cleaning and maintaining memorials.

**Part C: Additional information** offers further resources, research sources and useful information on steps such as finding conservation specialists.

## Queensland's monumental war memorials

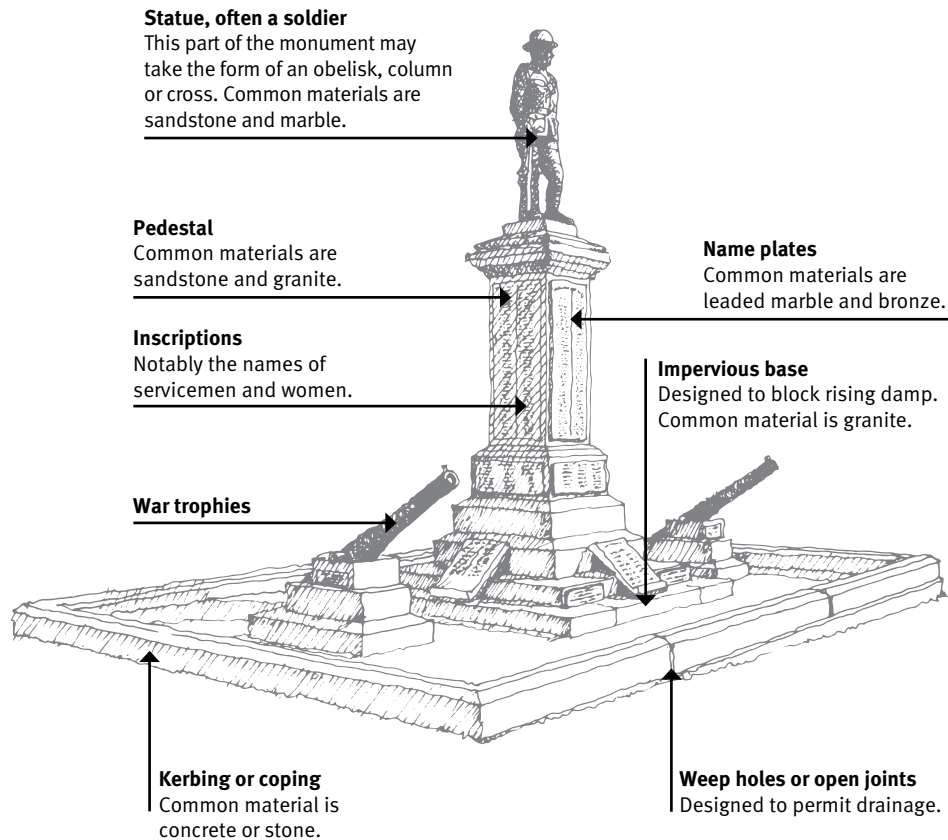
Many of Queensland's war memorials are monuments made predominantly of sandstone, granite, marble and bronze. These memorials most often take the form of statues, obelisks, columns, crosses, fountains, clocks or gates. Queensland's **state memorial in Anzac Square** [Queensland Heritage Register, place identification (QHR) 600062] an outstanding example of a monumental memorial, is a peristyle incorporating an eternal flame. Honour boards, usually located inside public buildings, are also very common. Some memorials have a functional nature, taking the form of seats, avenues, windows, swimming pools, parks or buildings.



Queensland's state memorial in Anzac Square [Queensland Heritage Register, place identification (QHR) 600062]

## Parts of a typical monumental memorial

A war memorial comprises a number of typical parts. All of them can suffer wear and tear over time. Understanding all of the components of a memorial will help custodians conserve its role and significance.



A monument such as the one depicted above usually forms the memorial's centrepiece. This diagram shows the main parts of a typical monument.



**Boonah War Memorial and Memorial Park** [QHR 600035] features many typical parts; the monument in the centre, enclosure fence, flagstaff, artillery pieces (known as war trophies) and central path and paved area.



**Warwick War Memorial and Gates** [QHR 600946]. The landscaped setting, including garden beds and trees, are an important part of a memorial. This memorial also features memorial gates, a typical feature of many memorials.





## Step 1: Understand your community's memorial

As a custodian, your first priority in caring for a memorial is to understand the significance of its elements, and help others understand that significance. The best way to do that—for anyone involved in its present or future care—is to document the original design and layout of the memorial together with how and why it has changed over time, and to benchmark its present condition. This essential information will determine how you and others maintain your community's memorial, make repairs and decide on any necessary changes.

This section outlines the significance of all of the elements of a memorial, and helps you research and document your memorial's original design and any changes that have occurred over time.

## Understanding the elements of a war memorial

### Setting

The memorial's location usually has special significance. The sites were often set apart and vested with almost sacred significance—much like a grave site—providing a place where the bereaved could grieve and the community could publicly commemorate.

Designers and community representatives chose locations that would promote remembrance and ensure memorials were public sources of inspiration—often placing them at major intersections, on hills, overlooking the sea, or in high public traffic areas such as railway stations. For similar reasons, communities located honour boards in public buildings such as community halls, town halls and churches. They may also have chosen sites that would best conserve their honour boards for the future.



Members of the Bundaberg community lay wreaths at the **Bundaberg War Memorial** [QHR 600364], circa 1921. John Oxley Library, State Library of Queensland, 1921.

This prominent location provides ample space for commemoration ceremonies. It's important to respect these design features when maintaining the memorial or planning changes. A roundabout has more recently been constructed around this memorial.

## Design and construction

Skilled designers and craftsmen carefully designed memorials and their settings to create a sense of solemnity and respect—and they wanted them to last. Befitting this purpose, they chose durable materials, sombre colours and dull finishes. They also incorporated features that guarded against rising damp and provided drainage.

As a custodian, with a privileged insight into the history of your community's memorial, one of your most important roles is to encourage all those involved in its care to respect the creator's original intentions and craftsmanship when planning any work.



The lions' heads on the parapet of the peristyle in **Anzac Square** [QHR 600062] act as spitters, channelling water from the top and away from its sides.



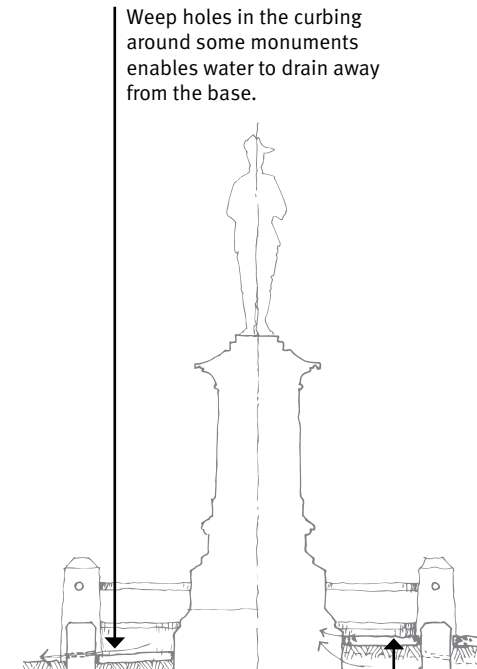
Designers gave sandstone monuments a base such as granite that is impervious to water.



Painting a monument significantly changes its design. This monument was originally unpainted except for details on the flags. The uniform pale-blue colour is contrary to the designer's intention and the paint may contribute to deterioration of the stonework.

## Drainage of a war memorial

Stone-masons carefully designed memorials to allow for adequate drainage.



Weep holes in the curbing around some monuments enables water to drain away from the base.

If the area around the base of a monument is built up, for example with pavers or concrete, it may close weep holes and expose porous stone to the soil leading to water absorption and rising damp.



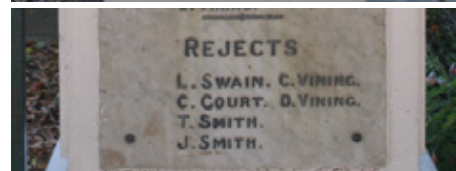
## Inscriptions

Inscriptions are the most important element of a war memorial and possess outstanding historical significance.

The inscriptions record the names of those from the district who served. One memorial at Montville (QHR 602616) also includes the names of men who volunteered for service in World War I but who were rejected as unsuitable for service.

The purpose of a memorial is to honour those who are listed, and the names hold special importance to relatives and friends. If the names become illegible—due to weathering or loss of letters—it may not be possible to restore them. Community members provided names in response to a public appeal at the time of construction and there may be no other record of who was originally listed on the memorial if the names are lost.

Army personnel records are arranged by surname or fighting unit, not by home town, and Australian service records offer no other known grouping of names by locality. The only known listing of local servicemen and women may well be in your hands.



The memorial gates at Montville record the names of men who volunteered to enlist for service in World War I but who were rejected as unfit for service. [QHR 602616]



Inscriptions may also provide information about the sponsors, mason responsible and date of construction.

## Landscape and associated elements

Besides a principal monument, memorials usually include other important elements such as war trophies, gardens, flagstaffs, trees, fences, paths, and open space. Secondary monuments may commemorate subsequent conflicts. All of these elements are integral to the memorial.

Designers often arranged the landscape elements in a formal layout to draw attention to the principal monument and to take advantage of view lines, often creating paths leading to a paved area around a fenced monument. They also used ornate entrance gates to visually frame the main memorial.

The landscape itself is sometimes a primary feature of the memorial. For example, the memorial at Stanthorpe comprises a kiosk or rest house set in a rugged park. The park's landscape, together with several trees believed to be propagated from the famous 'Lone Pine', make symbolic reference to Gallipoli—designed to evoke particular reflection and contemplation.

The landscape also plays an important role in commemoration ceremonies. The space around the main monument makes room for participants and onlookers. Flagstaffs are important features in ceremonies. All playing a role in honouring the fallen, landscape features are critical considerations for custodians maintaining a memorial or contemplating future changes.

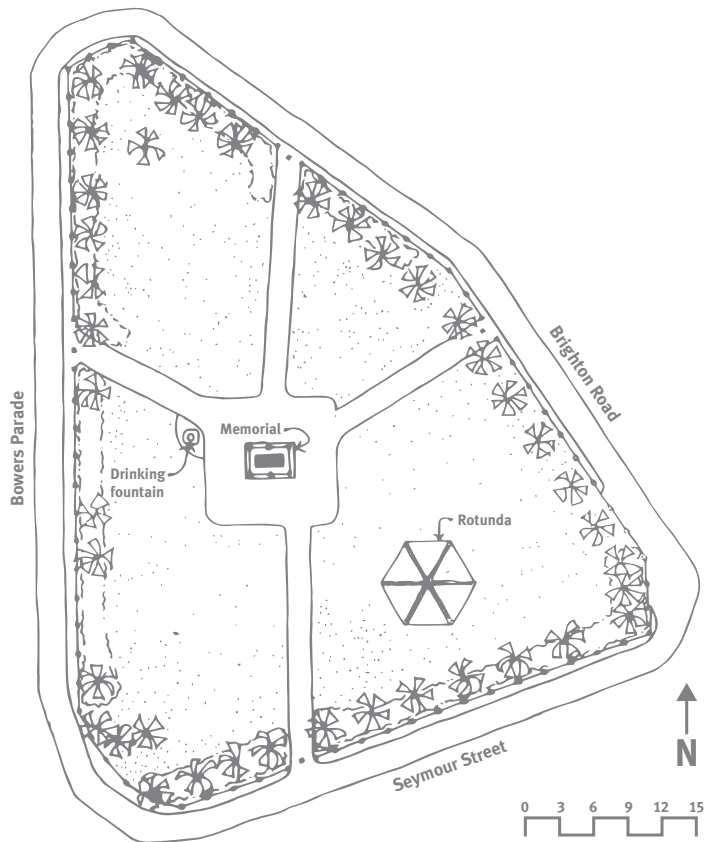


The Stanthorpe Soldiers' War Memorial [QHR 601632]. The rugged stony outcrop which forms the setting of the memorial kiosk or rest house at Stanthorpe makes symbolic reference to Gallipoli.



Lone Pines: Plaque from the War Memorial and Heroes Avenue [QHR 600824] at Roma

During the Gallipoli campaign, Turkish troops felled pine trees on the battlefield for use in their defences. A solitary pine was left standing on a ridge that became the site of the Battle of Lone Pine, one of the bloodiest actions of the campaign. Pine cones from the battle field were brought back to Australia, and Aleppo (*Pinus halepensis*) and Turkish (*Pinus brutia*) pine trees were successfully grown from them. Since then, Australians have distributed hundreds of seedlings propagated from these trees for planting in war memorials all over the country.



Sandgate Memorial Park site plan (city Design 2002).

**Sandgate War Memorial Park [QHR 602454]**

The elements of the park's design focus attention on the cenotaph in the centre. *Source: Brisbane City Council, Sandgate War Memorial Park: Conservation Management Study (April 2002).*

**Symbolism**

War memorials are rich with symbolic elements that signify their special purpose. Vital to safeguard and conserve, symbolic elements may include:

- urns and broken columns (symbolising death)
- wreaths (mourning)
- eternal flames (remembrance)
- crosses (sacrifice)
- laurels, triumphal arches and Winged Victories (victory)
- globes (humankind)
- columns (honour)
- lions (fortitude)
- water in the form of fountains, drinking spouts, ponds and horse troughs (regeneration)
- obelisks (regeneration)
- rising suns (national birth)
- swords and rifles (war)
- flags (Australian nationalism).

Take the time to learn and explain to others the symbolic elements of your community's memorial to ensure its symbolism is conserved and not lost. For example, the common 'digger' memorials—featuring soldiers in natural pale stone—convey the ghostly presence of a deathless army. Sadly, in the past many have painted these statues to simulate living soldiers, forever damaging their original significance.



Typical symbolic elements used on the **Herberton war memorial [QHR 600541]** include the pale stone soldier, urns (death) and a wreath (mourning).







## Step 2: Inspect and maintain the memorial

Supported by your good understanding of the significance and original appearance and condition of your community's memorial, your regular inspections and maintenance will help prevent a lot of the damage that memorials suffer.

## Inspecting the memorial's condition

### Initial survey

As the custodian of a war memorial, it's important that you know the issues you're dealing with before you plan or take steps to remedy any damage or potential problems. Gather information about your memorial's condition and evaluate the extent of deterioration, damage or risks.

Carry out a thorough initial survey to benchmark the condition of the memorial. You can adapt the inspection schedule in **Maintenance schedule** in **Part B: The methods**—for both monumental memorials and honour boards. Refer to **Common problems** in **Part B: The methods** and their repair to understand the problems you may be dealing with.

- Record the condition of the memorial using photographs and written notes.
- Photograph the inscription and record all of the listed names.

If the memorial is damaged at a later stage, your record of its initial condition will greatly help in making decisions about repair and conservation. It will also help you and others measure gradual changes in the condition of the memorial as it ages.

### Regular surveys

Regularly inspecting the condition of your community's memorial or honour board is the foundation of a good maintenance program. These inspections should identify defects before they cause serious problems. Adapt the inspection schedule you used to conduct your initial benchmark survey to develop your own routine inspection checklist.

To set the appropriate time period between inspections, start by inspecting the memorial at short intervals such as six-monthly, monitor changes, and adjust the interval relative to the pace of changes.

Keep a written record, supplemented with photographs, of:

- when inspections were carried out
- who did the inspection
- what was inspected
- any defects that were found
- further work that may be required.

Using standard inspection checklists and forms helps you keep consistent and accurate records when you are monitoring the condition of your community's memorial over time. Similarly, using the same people to carry out sequential inspections helps you accumulate good, consistent information about the memorial's changing condition.

## Maintaining the memorial

Well-applied maintenance practices could prevent most of the damage that memorials suffer. Unnecessary work—such as excessive cleaning, painting the memorial, or retouching inscriptions with paint—can leave permanent damage.

Develop a schedule of maintenance activities that apply to your memorial, taking into account dates for memorial services such as ANZAC Day. Refer to **Maintenance schedule** in **Part B: The methods** of this guideline.

The condition of your community's memorial will help you determine how often you do maintenance activities. It might help to carry out maintenance tasks at the same time as your regular surveys of the memorial. It may also be a good time to clean the memorial.

### Cleaning

When carrying out your regular inspection of your community's memorial, determine whether cleaning is necessary. A memorial doesn't need to look 'as good as new'. The patina of age is natural. Appreciate its beauty. You'll need to weigh up the benefits of cleaning against the risks of damage that inappropriate or excessive cleaning can cause.

Soiling may accelerate corrosion and deteriorate the fabric of the memorial. But particular care needs to be taken when cleaning ageing stone and metals. Refer to **Cleaning your memorial** in **Part B: The methods** for recommended cleaning methods for honour boards, graffiti, stonework and metals.

As a general rule, do not clean the memorial unless it is at risk of damage or the memorial has become unsightly. Over-cleaning can cause permanent damage. Get specialist help if gentle cleaning fails to work (refer to **Contacting relevant specialists** in **Part C: Additional information**).

#### Do:

- ✓ clean leaves and other debris from monuments
- ✓ gently clean surface deposits and bird droppings from stonework or metal.

#### Do not:

- ✗ clean stone in poor condition—it is friable and cleaning may lead to loss of material
- ✗ use high pressure water, sand-blasting, chemicals or abrasives
- ✗ attempt to clean graffiti with solvents or abrasives
- ✗ remove biological growths such as algae, moss or lichens unless they are causing damage or are unsightly
- ✗ attempt to achieve a high polish on metal parts
- ✗ clean inscriptions without first consulting a monumental mason or other specialist with conservation expertise, especially if the inscriptions are gilded. The fine edges of inscribed or incised lettering on weathered or corroding stone are easily damaged and leaded letters can be easily lost.



The dark patches on the **Windsor Memorial** [QHR 600350] are a natural oxidation of ferrous inclusions within the sandstone. While it may be possible to clean this off, it will return.

## Keeping records

Always keep records of your maintenance and cleaning activities. This will help:

- recognise any unexpected outcomes or damage caused by cleaning techniques
- track specific areas of concern
- highlight design or material defects
- monitor the effectiveness of maintenance and cleaning practices
- ensure continuity of care when maintenance personnel change
- predict future problems and costs.



## Step 3: Decide on essential repairs or changes

What should you do if you identify problems during your routine inspections and maintenance? **Do as much as is necessary but as little as possible.** This fundamental principle has long guided heritage professionals and good custodians in deciding whether to make repairs or changes to memorials.

Deciding what's necessary, can be quite difficult. Most memorials are ageing structures; so they don't need to look as good as new—nor should they. Moreover, mistakes made in attempting repairs or changes can irrevocably damage war memorials. Custodians have a range of issues and risks to consider when confronted with a defect or apparent problem—decide whether it is:

- an option to do nothing and monitor the situation
- a problem that can be fixed quickly and simply without the need to obtain approvals
- a bigger problem involving work that needs to be approved by local or state authorities.

## Guiding principles

Consider doing nothing other than monitoring the damage if the remedy risks causing more damage to the memorial than the problem itself, or if the defect:

- does not have a significant visual impact
- is not structural (refer to **Structural cracking** in **Part B: The methods** to recognise structural cracking)
- does not endanger safety
- will not lead to major problems
- does not have a direct impact on important elements such as lettering in inscriptions.

If you decide that repairs or changes are essential, the following general principles are useful when deciding what to do.

### Do:

- ✓ be guided by your research on the original appearance of the memorial and changes made over time
- ✓ adopt a cautious approach
- ✓ retain as much as possible of the original design, materials and features—for monumental memorials this may include plants, trees and views to and from the memorial
- ✓ patch original elements rather than replacing them if replacement is unavoidable (using replacement elements or materials that match the originals)
- ✓ ensure planned repairs can be reversed without damaging the original materials.

## Seek advice

How do you decide what's essential and what's not? The short answer is, consult the specialists.

A specialist in conserving memorials will help you understand and evaluate the risks and benefits of proposed work to avoid causing damage that could otherwise be permanent.

As well as being a skilled technician, a specialist will be able to identify the cause of the problem and recommend steps to prevent it recurring.

These specialists include stone or monumental masons, conservators, structural engineers or horticulturalists. Refer to **Contacting relevant specialists** in **Part C: Additional information** for more information.]

### Do not:

- ✗ remove or change the original design, appearance or material unless it is unavoidable—this could include plants, trees and views to and from the memorial
- ✗ introduce modern elements such as galvanised self-drilling ('Tek') screws
- ✗ fix modern services such as power points to monuments or structures of heritage significance
- ✗ repair stonework or inscriptions before thoroughly assessing the risks. Most memorials are comprised largely of stone, and inscriptions make each memorial unique. Both are highly susceptible to damage.

Always maintain original landscape features to prolong their life rather than replace them. If you're planning to remove any significant plants or trees—perhaps because they appear to be unsafe, dying, or because their roots are causing damage—get horticultural advice to be sure there are no alternatives.



Do not fix services such as electrical outlets to stonework.

## Step 4: Manage needed repairs or changes

Your approach to dealing with issues, whether they are repairs or necessary changes, will vary depending on whether the issue involves a simple repair—for example, replacing some lost lettering in an inscription—or a more complex change. All work requires good planning, managing and record keeping. However, more complex work—for example repairing a number of defects or making changes to the memorial—will require a more carefully planned program of work.

## Arranging simple repairs Arranging a program of repairs or changes

Simple repairs can be quite important. For example, it is important to replace lost lettering on an inscription as soon as possible, however this is a simple one-off task that is relatively easy to accomplish.

While it may be possible to do some simple repairs yourself, repairs to war memorials require very careful handling, so your community's memorial is safest in the hands of a qualified tradesperson or specialist. **Common problems** in **Part B: The methods** and their repair identifies appropriate specialists and tradespeople to deal with typical problems.

You'll first need to obtain quotes from specialists skilled in the repair work you require. When obtaining quotes to carry out repairs, ask the specialists to document how they propose to do the work—being mindful of appropriate repair techniques as explained in **Common problems and their repair** in **Part B: The methods** and their repair. Asking to see examples of their work will help you ensure you have someone with the necessary experience. Make sure you are briefed on the cause of the defect and take steps to prevent a recurrence.

If you've identified a number of defects in need of repair or decided on necessary changes, you'll need to treat the work as a project. In this event it may be wise to engage a specialist to oversee the work.

Here are some important actions to take when managing a project.

1. Consult a conservation specialist.
2. Document what needs to be done.
3. Consult people who have a significant interest in the memorial.
4. Obtain quotes to carry out the work from specialists with relevant qualifications and experience as described previously (arranging simple repairs).
5. Prepare a budget and timeline.
6. Document a project plan.
7. Obtain necessary approvals.
8. Provide appropriate supervision.
9. Record the work.

## Obtaining necessary approvals

### Exempt development

EHP has assessed some works as being exempt development, and these works can proceed without further application. It applies to all war memorials entered in the Queensland Heritage Register and by pre-approving certain categories of work it is designed to make it easier to do the minor work needed to keep a place in active use, good repair and optimal operational condition. These exempt works are covered by the following:

- *General Exemption Certificate: Queensland Heritage Places*
- *General Exemption Certificate: War Memorials*

You can view more information about these certificates on EHP's website at [www.ehp.qld.gov.au/heritage](http://www.ehp.qld.gov.au/heritage)

EHP may determine further, specific works as exempt development on application. EHP assesses an application for a specific Exemption Certificate to ensure that there is no detrimental impact on the heritage significance of the place. The assessment of an Exemption Certificate application is simpler and therefore quicker than the assessment of a development application. Further information about Exemption Certificate can be found at [www.ehp.qld.gov.au/heritage](http://www.ehp.qld.gov.au/heritage)

## Development approvals

You may need to obtain approval before changing or repairing your community's memorial. Remember to factor this time into your planning—it can take several weeks for the approval process. Remember that approval will need to be obtained **before** commencing work. Please contact your local council for advice.

If your community's memorial is entered in the Queensland Heritage Register—and you propose to undertake development, significant repairs or move the memorial—you will need to obtain approval in accordance with the provisions of the *Queensland Heritage Act 1992* and *Sustainable Planning Act 2009*.

Under State Assessment and Referral Agency (SARA) provisions, the Department of State Development Infrastructure and Planning (DSDIP) acts as the assessment manager or referral agency for development applications relating to places entered in the Queensland Heritage Register. EHP provides advice to DSDIP on these applications. Further information about SARA can be found on DSDIP's website at [www.dsdipl.qld.gov.au](http://www.dsdipl.qld.gov.au)

As defined in the Sustainable Planning Act 2009, development includes:

- carrying out building work
- carrying out plumbing or drainage work
- carrying out operational work
- reconfiguring a lot
- making a material change of use of premises.

For a place entered in the Queensland Heritage Register, the definition of building work is expanded to include types of work that are not normally considered to be development, such as:

- painting
- maintenance and repairs
- changes to interior finishes and fittings
- altering landscape features
- excavating artefacts or disturbances to land that damages or exposes archaeological relics.

Where the Queensland Government proposes development of a place entered in the Queensland Heritage Register, the development sits outside SARA arrangements. In this case Queensland Heritage Council (QHC) assesses the proposed development and makes a recommendation to the relevant Minister.

See the feature on the following pages for more information on necessary changes that may require approvals.

## Work that may require approval

### Restoring or reconstructing original features or appearance

It is best to replace missing original features and vegetation on a like-for-like basis—unless they were removed because they were causing damage to the war memorial. If someone has made later additions to your memorial, consider removing them—unless they were added formally to commemorate conflicts that occurred after the memorial was erected.



Compare the photographs above: The historic photograph (top) reveals that the original sandstone urns on this memorial have been replaced with timber urns (bottom). The timber urn to the right has split. Consider replacing the timber urns with stone urns that match the originals.

Source: historic image, John Oxley Library, State Library of Queensland, 1925.



### Introducing new features

As a rule, avoid introducing any new features. A few circumstances may make it necessary to introduce new structures or plantings.

For example to:

- screen new elements or views that detract from the importance of the memorial
- meet regulatory requirements
- improve or maintain access to the memorial
- commemorate more recent military operations or conflicts
- incorporate donated war trophies
- install services such as security lighting or cameras appropriately.

Before deciding to introduce new elements, obtain specialist advice on the impact that these changes will have on the original design including views to and from the memorial. Also consider the impact of the new elements on the original structures and plantings.



Installing a rubberised, impact absorbent surface below this war trophy would reduce the risk of injury to a child climbing the gun and would have less visual impact than the modern style child-proof fence.

### Adding names, plaques or monuments

You may need to consider adding to your memorial the names of men and women who served in more recent military operations. Obtain advice from a relevant specialist before planning any such additions. Carefully consider the impact the additions will have on the original design. While it may be possible to add a new plaque to an existing monument, avoid cluttering it with too many; carefully consider placement and ensure that the material used for new plaques blends aesthetically with the memorial. It may be better to create a new monument nearby. Consider:

- functional requirements—ensure that new monuments accommodate commemoration ceremonies
- aesthetic factors—ensure that the design of new monuments is in keeping with the rest of the memorial. The colour and texture of new monuments should be similar to existing monuments.



**Beaudesert War Memorial.** [QHR 600028]

The community has added names to this monument to reflect subsequent conflicts. The design and setting of a memorial can present special challenges when it comes to adding extra names.

### Moving memorials

In some cases—for example in the face of a high risk of damage—moving a memorial may be unavoidable. If you're seriously concerned that the location of your memorial places it at risk, engage a specialist, such as a conservation or landscape architect, to help you identify whether other alternatives exist.

A specialist will also guide you through the process of moving a memorial if it becomes necessary.

These important steps will include:

- consulting the local community—and, if possible, descendants of the people listed on the inscription—about where and how the memorial should be relocated
- fully documenting the memorial before moving—including making a plan of the site; a record of the names on the inscription; and a photographic record of the memorial, its surroundings, and the inscription.
- consulting specialists such as stone or monumental masons and metals conservators
- giving the same considerations to choosing the new site as were given to choosing the original site. Prefer locations that are prominent and allow public access and ceremonies.



# PART B

## The methods

Windsor War Memorial Park, Windsor [QHR 600350]

## Common problems and their repair

The advice in this section on preventing and repairing damage to war memorials rests on one simple principle: Custodians prevent; Conservators repair.

Custodians can protect their war memorials from serious deterioration by understanding how to prevent damage. However, where there is existing damage, uninformed repairs can cause serious damage—and so need to be trusted to a conservation specialist.

Part B offers advice to custodians on how to prevent damage, as well as information on repair work to help make informed choices about selecting conservation specialists.

## The elements of a war memorial

### Inscriptions

The loss of letters is one of the most common problems with memorial inscriptions. As a result, the incisions and holes that once fixed missing letters become more susceptible to chipping and weathering. If the letters are not replaced quickly, they may be impossible to replace.

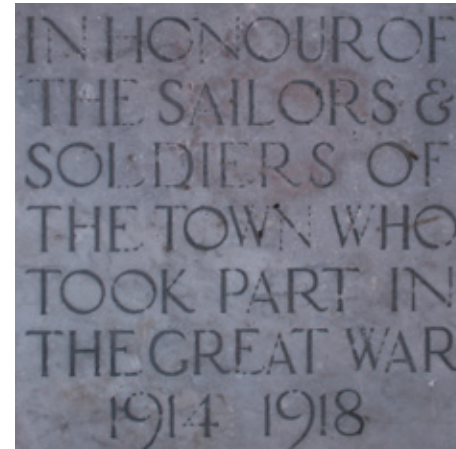
#### Do:

- ✓ employ a specialist to repair inscriptions or replace letters
- ✓ plan to replace missing lettering as soon as possible
- ✓ match the typeface and weight of the existing letters.

#### Do not:

- ✗ attempt to paint incised lettering—as paint alters the original appearance of the memorial, is likely to bleed into the stone, especially old sandstone, and cannot be removed without damaging the inscription
- ✗ recut incised lettering
- ✗ rearrange the sequence of names if it becomes necessary to replace any name plates.

If an inscription is at risk of becoming illegible, rather than attempting to repair it, record the names on a nearby plaque.



The letters of this inscription are badly worn. If action is not taken to remedy the situation, letters may soon become illegible.



## Statues

The statue component of a memorial, often depicting a soldier, is an artwork and was originally created by a sculptor or skilled monumental mason.

### Do:

- ✓ engage a specialist stone-mason to evaluate and complete any repairs
- ✓ research the original appearance of the statue.

### Do not:

- ✗ replace missing parts with materials that do not match the originals
- ✗ paint the statue—its creator never intended to colour it, and paint will cause irreparable damage (refer to **Part B: Paint damage**). If the statue was originally lime-washed, engage a specialist to reapply this coating if it becomes necessary.

## Honour boards

An honour board displays a roll of names of members of a local community, organisation or military unit who served in war. They are usually constructed of wood, stone, metal, or a combination of these materials—and generally located on an internal wall of a public building.

Careful positioning of honour boards avoids long-term damage. Avoid the need for repairs by preventing damage. Ensure the honour board is not exposed to prolonged moisture, high humidity, heat, sunlight or bright lights.

Exposure to the above contributes to:

- insect attack
- mould
- splitting and warping of woodwork
- damage to veneers and finishes
- corroding of brass lettering.

Excessive light fades timbers and causes damage to finishes and gilding. Heat and sunlight can dry out timbers causing cracking.

### Do:

- ✓ always obtain advice from a metal or timber conservator before attempting repairs including advice about the original finish and the impact of any treatments you may be considering
- ✓ ensure repairs have minimal impact—retaining as much of the original design and materials as possible.

### Do not:

- ✗ strip, refinish or stain timber
- ✗ repaint or regild lettering.



**Ninth Battalion honour roll, crypt, Anzac Square, Brisbane (QHR 600062).** This was undertaken by former Brisbane sculptor W. Leslie Bowles.

## War trophies

Many war memorials incorporate military equipment such as artillery pieces. These are generally referred to as war trophies even though they include surplus Australian as well as captured military equipment. War trophies incorporate a range of materials including iron, steel and timber—all subject to deterioration, especially corrosion of steel and iron parts.

Always obtain advice from a conservator with relevant expertise before planning repairs. The Australian War Memorial in Canberra employs conservators who can advise you on repairs to war trophies.

### Do:

- ✓ keep guns properly drained
- ✓ prevent the accumulation of water (e.g. in barrels)
- ✓ keep carriage boxes closed
- ✓ if necessary, drill small holes to drain water from areas where it can collect
- ✓ place all components well clear of the ground
- ✓ keep barrels and other cavities clear of rubbish
- ✓ keep wheels well painted
- ✓ support the axles of guns so the wheels do not touch the ground
- ✓ take special care to conserve original wooden wheels on war trophies—they are becoming rare.

### Do not:

- ✗ replace original wheels with locally made dry wheels.



A war trophy at the **Boonah War Memorial** [QHR 600035]. The barrel has been capped to keep out rain water and the axle is supported so that the wheels are not bearing the weight. The capping, while effective in preventing entry of rainwater, has a significant visual impact. Rust stains on the concrete plinth indicate corrosion of metal above the stain.



The plug on this war trophy is effective in keeping water and debris out of the barrel and has less visual impact than the capping in the illustration, top. The gun was unpainted until 2002; it is not known if the current paint work replicates the original camouflage pattern.



Untreated corrosion of this war trophy has resulted in thinning and loss of steel.



Axle supports ensure that aging wooden wheels are not required to support the weight of the trophy.

## The materials in a war memorial

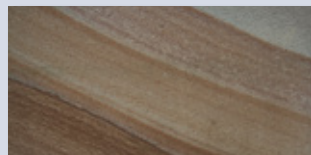
### Stone

There are many things a custodian can do to prevent damage to their community's war memorial. However, repairs to stonework on war memorials are always safest in the hands of specialist stone masons. Always obtain advice from a stone or monumental mason with conservation experience before arranging repairs to stonework. You may also need to obtain advice from other specialists if the defect is caused by structural problems, rusting metal fixtures, or penetrating roots (refer to **Part C: Contacting relevant specialists**).

As a custodian, being aware of appropriate methods of stone repair will help you make informed decisions when you are engaging the services of specialists. Some common methods are outlined in Part B: Stone—common repair techniques.

## Guide to identifying stone commonly used in memorials

Most monuments in Queensland are built of stone—mostly sandstone, granite, tuff and marble.

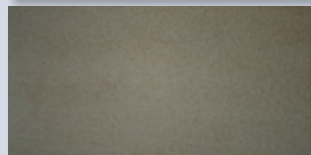


### Sandstone

Sandstone is generally the main structure of monuments, the pedestal and statue.

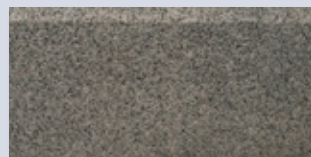
Sandstones comprise consolidated grains of sand cemented together by silica. The layered appearance of sandstone, revealing its formation by sedimentation (top left), is familiar to most Queenslanders. Stones that don't show layers of sedimentation are known as freestones (bottom left).

Sandstone has been quarried in Queensland since the late 19<sup>th</sup> century and the state has abundant reserves. Generally yellow-to-brown in colour, the stone is fine-grained, without obvious stratification, and is easily worked. It is the most widely used of Queensland's building stones.



### Tuff

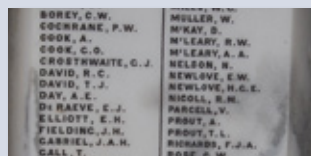
Tuff, often incorrectly called porphyry, is an igneous rock formed by volcanic action. It is hard and breaks into conveniently squarish blocks. It occurs in a belt stretching through Brisbane in a north-south direction. Of variable colour through white, pink, green, yellow, brown and purple, it contains occasional mineral crystals. Rough-dressed stones weather better than smooth-dressed stones. Today its restricted occurrence limits supplies.



### Granite

Granite may be used in the main structure of monuments, and is almost invariably used for the base (left) because it is harder wearing and impervious to water—providing a barrier to rising damp.

Granites are igneous rocks formed from magma within the earth's crust. They are well distributed in the state, close to coastal towns and cities. They range in colour from pink to shades of grey, are hard, weather well and can generally take a polish.



### Marble

Honour boards, plaques and other attachments to monuments often feature marble.

Marble is a granular metamorphic rock. It is composed of calcite that formed over time as extreme pressure and temperature re-crystallised calcareous sediments. Queensland is well-stocked with marbles that are coloured to varying extents by the presence of impurities. Queensland has favoured marble for monumental, interior and terrazzo work.

Most of the marble used in Queensland war memorials is fine-grained and relatively durable, and polishes well. However, some monuments are made of Ulam marble obtained from near Rockhampton. The sugary crystals of this coarse-grained marble deteriorate and readily absorb dirt and other pollutants. Unfortunately, Ulam marble was widely used in Central Queensland and in many monuments in the south-east. The marble on some of these monuments may eventually require conservation work.



## Common problems with stone

Remember:

- Conservators repair. Refer to **Part B: Stone—common repair techniques** and **Part C: Contacting relevant specialists**.
- Custodians prevent. Refer to the tips below for advice on how to prevent damage to your community's war memorial.

### Paint damage

Over time, many people have painted stone soldier statues in a misguided attempt to make them appear more lifelike or to preserve them; similarly painting entire monuments white to give them a cleaner appearance. These mistakes have proven very costly for many memorials. Paint prevents stone breathing, and traps water in the pores of the stone, eventually causing the stone to flake. Moreover, it is contrary to the intent of a memorial's original design. Painting becomes unsightly and seriously damages a monument physically, artistically and symbolically.

#### What to do

Unfortunately, little can be done to fix this problem. Consult a stone mason for an assessment.

As a custodian, your role in educating others about paint damage is supremely important—a critical factor preventing irreparable damage to your community's memorial.



It appears that damage to this monument commenced prior to the stone being painted. The painting may have been a misguided attempt to stop decay of the friable stone. It has, in fact, accelerated it.

### Rising and falling damp

Rising damp occurs when monument stones absorb ground water through capillary action. The water contains salts that crystallise on and below the surface of the stone as it dries out. The expanding crystals break down the surface of the stone causing it to crumble.

Falling damp occurs when rainwater, containing salts from atmospheric pollutants, repeatedly soaks into an area of the stonework—where it then dries out with the same effect as rising damp.

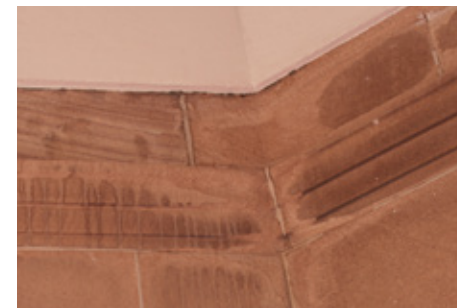
#### What to do

Prevent damage by:

- ensuring that the base of the monument is well drained
- ensuring that damp-proof barriers remain intact
- repointing open joints
- ensuring that water cannot accumulate on upwardly facing surfaces
- not planting garden beds close to monuments—as water-borne salts from fertilisers and weed killers can be absorbed into the stone from garden beds
- clearing debris from overhanging branches—as accumulated debris can retain water, causing falling damp
- looking for, and possibly reversing, alterations to the monument that may have created the problem. For example, added elements, such as paving or concrete, that prevent water escaping or direct water towards the monument.



The decay of the sandstone on this monument is the result of rising damp.



Falling damp resulting from leakage through the roof of this memorial is causing the upper part of the wall to decay. The leakage has also caused some staining.

## Delamination

Sedimentary rock, such as sandstone, developed in horizontal layers as the sediment deposited and hardened to form rock. Sandstone blocks should be laid (bedded) so that the ends rather than the faces of the layers are exposed. If the stone has not been bedded correctly, layers can delaminate from the surface. Incorrect bedding exacerbates the problem of rising and falling damp—salt deposition can lead to large sections of layers flaking off the surface of the stone.

Cornicing is particularly susceptible to delamination through falling damp because the faces of the sandstone layers are, by necessity, exposed on the upper surfaces and may begin to lift as moisture penetrates the stone.

### What to do

Prevent damage by:

- correctly bedding new stone blocks
- repointing open joints.



The face of this stone is delaminating.

## Loss of mortar

The lime mortar used for stonework is softer and more permeable than the stone and, as a result, water in the masonry dries through the mortar joint. Salts that would otherwise damage the stone cause the mortar to fret away. The mortar can be replaced more easily than the stone.

### What to do

Do not use hard cement mortars when repointing softer stones such as sandstone as they prevent water drying through the joint, causing more damage to the stone. Harder cement mortars may be used for hard stones such as granite. Do not replace lime mortar with mastic or other sealants.



Mortar lost from the joints between the uppermost blocks of this memorial will allow water to enter the memorial instead of falling clear of the side. This may eventually damage the stone.

## Cracks caused by rusting iron or steel fixtures

Water penetrating the stone can corrode embedded iron or steel fixtures. As the metal rusts, it expands—cracking the stone.

You may need to seek advice from a metals conservator about treating the corrosion in addition to seeking advice from stone specialists about repair (refer to **Part B: Metals—iron and steel**).

### What to do

Prevent damage by repointing open joints where the metal enters the masonry.



The rusting iron arch embedded in this gate pillar has expanded, causing the capital to crack.

## Cracks caused by penetrating roots or other nearby vegetation

Trees and shrubs planted near monuments pose risks. Roots from larger plants can penetrate the structure, opening joints or cracking the stone.

### What to do

You may need to seek advice from a horticulturalist in addition to seeking advice from a stone specialist about repair.

Prevent damage by implementing a vegetation management plan including provision for ongoing monitoring and pruning, as necessary, to maintain the integrity of the monument or memorial. This should include provision for:

- removing from the immediate area any tree and shrub seedlings that do not contribute to the significance of the memorial
- containing the root growth of plants and trees that are creating the problem.



These granite slabs have been disrupted by the roots of trees growing nearby.

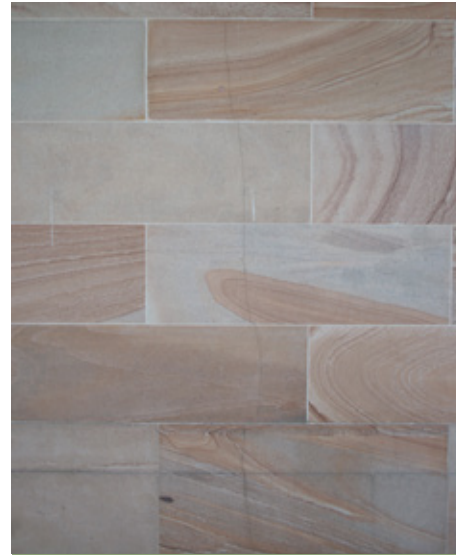
### Structural cracking

Structural cracking typically occurs across several stone blocks—caused often by movement in the foundations or invading tree roots.

#### What to do

Remedial action:

- No action may be required; movement in the foundation may not recur. Regularly monitor the crack by measuring its width and length. If it becomes worse, seek advice from a structural engineer.
- Arrange for the crack to be sealed by a stone or monumental mason using lime mortar.
- If, after consultation with specialists, you decide to take further action, rectify the underlying structural problem guided by a structural engineer.



This fine vertical crack across several sandstone blocks could indicate developing structural problems.



This crack has travelled across sandstone blocks and may be the result of ground movement. Water has penetrated the crack and contributed to crumbling of the stone. Mortar has been used to patch damaged stone towards the bottom of the picture.

### Biological growths on the stone

Moss in large quantities retains moisture on the stonework that can cause damage. If moss is growing along joints, the joints may be retaining moisture and in need of repointing. Algal growths turn black as they dry and become unsightly. Clean as advised in **Part B: Cleaning your memorial—stonework**.

Lichen is an organism composed partly of a fungus and partly of algae. It can cause damage to stone by generating acids, and by penetrating the stone and expanding and contracting. In some instances, it protects stone from the elements and, in some settings, contributes to the beauty of old stone monuments.

Removing lichen may cause more damage than the growth is capable of causing. Scrubbing off live lichen can also create unsightly pock marks that retain water and lead to further damage.

#### What to do

Prevent growths by:

- avoiding a damp shaded environment around the monument
- consulting an arborist if existing trees are creating too much shade. Understand how the trees contribute to the significance of the memorial before doing work to them.



The light green patches on this stone are lichen. Bird droppings, as can be seen here on the lion's head, are a common form of staining and can cause damage.



Monuments in warm humid climates are particularly prone to biological growths.



## Staining

Porous stone, especially sandstone, stains easily. Stains can be caused by:

- atmospheric pollutants
- debris, such as flowers and leaves from overhanging branches
- rusting iron fittings that leave rust-coloured stains
- oxidising ferrous inclusions (particles containing iron within the stone)
- oxidising copper and bronze, causing blue-green staining
- oxidising lead, causing white staining.

Decide if action is really needed; stains do not necessarily cause damage. Clean stone as advised in **Part B: Cleaning your memorial—stonework**. In addition to a stone specialist, you may need to seek advice from a metal conservator about treating the corrosion.

### What to do

Prevent staining by:

- controlling the oxidation of metals.
- regularly clearing vegetation debris from the monument.



Rust staining at the lower right of the bronze name plate. This may have been caused by a rusting ferrous cramp used to fasten the bronze plate to the sandstone.



Dark staining of sandstone monuments is quite common and may be caused by pollutants or biological growths. Painting the monument to create a 'clean' appearance is bad practice as it will damage the stone.



Water running down this column has oxidised the bronze swag and caused the greenish stain.

## Wear and tear

Soft stone like sandstone is susceptible to chipping and scrapes.

Only repair if the damage is severe and unsightly, since the repair work may have a greater impact on the appearance of the monument than the damage.

### What to do

Prevent damage by:

- not growing grass against the bases of monuments as it increases the risk of damage from edge trimmers and lawn mowers
- providing traffic routes so that through-traffic avoids your monument. For example, directing vehicles away from sandstone gate pillars
- providing appropriate circulation space to reduce the incidence of damage.



This illustration shows more serious chipping.



The corners of soft stones like sandstone are particularly susceptible to damage, especially in gateways. The damage depicted here is not considered serious enough to repair.

### Inappropriate cleaning methods

Soft stones like sandstone and marble are easily damaged by chemicals and abrasive cleaning methods. High-pressure water or sand blasting can damage stone and wear away carved sculptural details. It can also remove the hardened case that protects the stone, exposing softer stone to weather and accelerating erosion. Unfortunately, damage caused by sand-blasting is impossible to reverse.

#### What to do

Prevent damage by:

- raising awareness about sand-blasting damage. As a custodian, your role in educating others about sand-blasting damage is an important factor in preventing irreparable damage to your community's memorial.
- cleaning as advised in **Part B: Cleaning your memorial.**



The markings on this damaged stone suggest it has been cleaned with an abrasive power tool.



The surface of this stone appears to have been damaged by cleaning with high pressure water.



Sandblasting this memorial resulted in loss of definition of the lettering (top). The section of stone bearing the lettering was later replaced (bottom).

Source: (top) Richard Stringer

### Inappropriate repairs

Hard cement mortars or epoxy fillers—often mistakenly used to repoint or repair soft stones such as sandstone—look unsightly and accelerate the decay of surrounding stone.



Hard cement mortars aren't suitable for repointing.

### Degradation of marble

Marble is susceptible to weathering, particularly on exposed horizontal surfaces. Calcium carbonate, the main component in marble, reacts with dissolved acids in the atmosphere and converts to soluble gypsum. This gradually erodes, leaving a dulled, sugary texture and weakening the stone. As the marble weakens it can bow and eventually crack.

#### What to do

Treatment should be undertaken by a specialist—appropriate treatment may include:

- careful cleaning
- extracting salts from the stone
- treating with a consolidant (this consolidates friable delicate stone on and near the surface and may prevent further erosion)
- gentle repolishing
- applying microcrystalline wax to the surface.



The surface of this marble has degraded and worn.

### What is microcrystalline wax?

Microcrystalline wax—a petroleum derivative—has a very fine crystalline structure, adheres well to metals and can be manufactured with a range of melting temperatures. Outdoor applications require a microcrystalline wax with a melting temperature higher than 85°C Indoor applications tolerate lower melting temperatures. You will need an experienced metals or stone conservator to select and apply microcrystalline wax.

## Common repair techniques with stone

Experienced stone or monumental masons use a number of effective methods of repair. As a custodian, it is important to understand good conservation practice.

### Mortar patching

A stone-mason will know which mortar is most appropriate for patching.



Here, the repairer has used a lime mortar of a similar colour and texture to the stone—or high-quality premade lime mortar—to fill small holes or depressions.

### Indenting

In some cases stone-masons may indent, or replace, damaged stone.



A section of damaged stone is removed and replaced with a piece of similar texture, colour and bedding.

### Replacing damaged blocks

In cases of extreme damage—where other repair methods such as patching or indenting will be ineffective—stone masons may need to remove the damaged stone and replace it with a stone of a similar type.

### Repointing

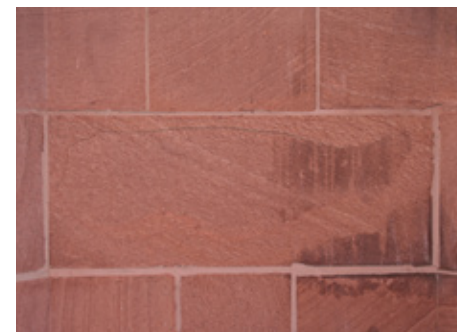
Mortar plays an important role in sustaining a memorial. Custodians should leave mortar that is in sound condition alone, while being alert that loose or missing mortar can let in moisture and cause damage. If you identify mortar damage, employ a skilled tradesperson with conservation experience to repoint the joints.

#### Do:

- ✓ remove old mortar by hand
- ✓ use lime mortar or good quality premade lime mortar. This allows moisture to evaporate through the mortar and ensures that it wears faster than the surrounding stone
- ✓ try to match the colour and texture of the original mortar.

#### Do not use:

- ✗ power tools to remove old mortar
- ✗ sealants in place of mortar
- ✗ cement mortar. It is less permeable to water than the stone, and is not flexible so does not accommodate movement. Using cement mortar can cause the stone to fret.



Hard or cement mortars are less permeable to water than stone. The water takes the path of least resistance through the stone, leading to the crystallisation of salts and, ultimately, stone damage.



## Metals

Always obtain advice from a metals conservator before undertaking repairs to metalwork. As a custodian, you should be aware of appropriate repair methods. Appropriate methods are suggested in Part B: Common problems with metals.

### Guide to types of metals commonly used in memorials

#### Bronze

Bronze, an alloy of copper and tin, is the most common metal in war memorials and is generally used in plaques, lettering or decorative details.

#### Copper

Memorial designers have long used copper for its aesthetic values and resistance to corrosion—particularly for pressed copper honour boards.

#### Brass

Memorial designers often used brass (an alloy of copper and zinc), with its yellow colour to contrast with copper honour boards—fixing brass name plates to the darker copper background with brass screws.

#### Lead

The most common use of lead in memorials is as lettering for inscriptions. However, it is also used as an effective waterproof sheathing. The metal is highly corrosion-resistant, developing a very stable patina of silver-grey lead sulphate.

#### Iron and steel

Iron and steel are used for fittings, railings or gates. Cast iron has some resistance to corrosion and can be made into complex shapes (e.g. decorative fence panels). Wrought iron, manufactured by smithing, is less common on war memorials. Mild steel is stronger than cast or wrought iron and is commonly used for fencing and railings. Iron and steel elements are usually painted.

## Common problems with metals

### Corrosion of bronze

Though corrosion-resistant, bronze does oxidise and, in extreme cases, corrodes. Oxidation causes a reddish-brown patina that is visually pleasing, stable, and protects the metal from corrosion. However, loss of patina or protective coatings, contact with other metals, bird droppings and pollution can accelerate corrosion. Left untreated, it may disfigure the metal, causing pitting and erosion.

#### What to do

Appropriate treatments may include:

- removing corrosion by-products. These may be promoting further corrosion
- in extreme cases, applying special chemical treatments or repatination.

Prevent corrosion by regular:

- careful cleaning as recommended in **Part B: Cleaning your memorial—metals**
- rewaxing with a microcrystalline wax or, for internal situations, by engaging a metal conservator to apply a protective lacquer. Take care to use an appropriate wax. Traditional waxes such as beeswax attract dust and may discolour.



The corrosion is advanced on this bronze name plate. The earliest phase of oxidation here is reddish-brown in colour. This layer of oxidised bronze, or patina, is stable and provides some protection from corrosion. The green, white and black patches indicate active corrosion that should be treated, as it will cause pitting of the bronze.

## Corrosion of copper

Copper oxidises to form a reddish-brown or green patina that is stable and protects against corrosion. Corrosion of the copper may occur if it is exposed to acidified water. Acidified rainwater run-off may dissolve the patina and, as the patina successively reforms and dissolves, the metal thins and eventually perforates. For this reason, pressed metal honour boards should not be located outside.

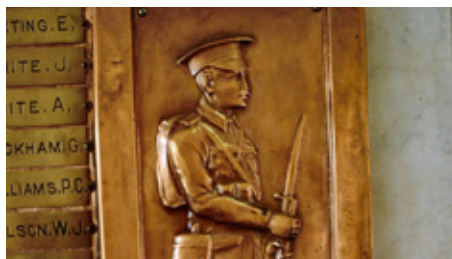
### What to do

Appropriate repairs may include:

- soldering a patch over the perforations
- replacing the damaged section of copper.

Prevent corrosion by:

- regular careful cleaning as recommended in **Part B: Cleaning your memorial—metals**
- eliminating the source of the acidic water
- protecting the copper from water run-off
- regularly rewaxing with a microcrystalline wax or, for internal situations, by engaging a metal conservator to apply a protective lacquer.



Details from the **Paroo Shire Honour Board** [QHR 600761].]



Oxidised copper in the form of reddish brown and green patina is visible on this copper guttering.

## Oxidation and corrosion of brass

Brass can corrode and oxidise. When brass oxidises it dulls and tarnishes. When it corrodes, white, blue or green areas appear on the surface of the metal. It is important to understand the original intentions of the designer who may have intended the brass to have a honey coloured patina. If this was the case, it would be inappropriate to give the brass a high polish.

### What to do

Appropriate treatment may include carefully removing corrosion by-products.

Prevent corrosion by regular:

- careful cleaning as recommended in **Part B: Cleaning your memorial—metals**
- rewaxing with a microcrystalline wax or, for internal situations, engaging a metal conservator to apply a protective lacquer.



Locating a metal honour board outside can present special challenges when it comes to controlling corrosion. The brass name tags on this pressed copper honour board are tarnishing.

## Deteriorating protective lacquer on brass

Conservators lacquer brass to protect it against oxidation and corrosion. This may have been for the purpose of retaining the metal's bright, reflective finish. Inappropriate cleaning can dissolve the lacquer, and as it ages it may become crazed.

### What to do

Engage a metal conservator to carefully remove the old lacquer and apply a fresh coat.

### Corrosion of lead

The underside of lead sheeting does not develop a patina and condensation can corrode it. Off-white, pink or brown flaky powder indicates corrosion. Left untreated it may eventually perforate the sheeting from underneath.

#### What to do

Arrange for an experienced lead plumber to undertake repairs. These may include:

- cleaning corrosion from the damaged area
- patching perforations by welding on a replacement section (patches should not be soldered as solder has a different thermal coefficient to lead, and the solder will eventually break off).
- Prevent damage by ventilating the underside of the sheeting.



The lead sheeting on the upper surfaces of this memorial has the characteristic silver-grey patina.

### Loss of lead inscription lettering

War memorials commonly lose lead letters from their inscriptions. If letters are lost, the names of those commemorated can become illegible and may be irrecoverable unless a record was made before the letters were lost.

#### What to do

Arrange for repair by a monumental mason as soon as possible. The new letters should match the originals in typeface and weight.

Prevent loss of lettering by:

- monitoring inscriptions for wear. (Inscriptions are the most important element of a memorial. The edges of letter incisions are highly vulnerable to wear and without repair may soon become illegible.)
- always checking debris at the foot of inscriptions for lost lettering and retaining so they can be replaced.



Note the holes used for fastening the missing leaded letters and the incisions outlining these letters. As these incisions wear away, the form of the lost letter will become less evident.

### Corrosion of iron and steel

Rust, caused by exposure to water and oxygen, disfigures these metals and reduces their strength. Rusting iron embedded in masonry may cause stains and cracks.

#### What to do

Appropriate remedial action may include:

- removing and treating rusting fixtures in masonry or concrete before replacing and sealing joints
- treating active corrosion
- using metal replacement fillers in damaged iron work
- welding matching material, under supervision of a metal conservator, to repair damaged sections.

Prevent corrosion by:

- protecting metal from exposure to water and air
- preventing water penetrating and pooling in joints between metal and masonry
- carefully maintaining paintwork.

Note:

- inexpert welding techniques can permanently damage old iron and steel
- repainting bare metal parts should only be done on the advice of a metal conservator.



This iron picket has almost rusted through. It will be necessary to treat the rust and replace the lost metal with metal replacement filler or to remove the badly corroded section and weld a replacement section.



## Other materials

### Common problems with other materials

#### Pests and fungal rot in timber

Micro-organisms living in and on wood cause rot in wood that has a moisture content higher than 20 per cent. The organisms slowly consume the wood, leading to softening and decay.

Honour boards can be subject to attack by borers. Some species of this beetle can cause considerable damage. Signs of borer infestation include:

- small holes in the surface of the timber
- fine dust (insect excrement).



Fungal wood rot in the armrest of a timber seat at a memorial.

#### What to do

##### Remedial action:

- Arrange for treatment by a licensed pest controller and repair of damaged timber by a qualified tradesperson or conservator.
- Appropriate actions may include:
  - removing decayed or damaged timber, retaining as much of the original material as possible
  - scarfing (joining) a section of good timber to replace damaged timber of a similar type
  - using timber replacement fillers to replace small areas of damaged timber that have been removed.

##### Prevent damage by:

- ensuring timber remains dry by managing the environment around the timber, avoiding conditions that may be contributing to dampness
- maintaining paintwork and other existing surface finishes
- regularly inspecting for pests
- maintaining termite barriers.

#### Cracking, water damage and biological growths on concrete

Common problems with concrete include:

- rising damp, with effects similar to stone
- corroding steel or iron fixtures, caused by water penetrating the concrete—as with stonework, leading to cracking
- corrosion in reinforcing steel that is placed too close to the surface of the concrete—ultimately cracking (spalling) the concrete
- cracking caused by ground movement or root growth from nearby vegetation
- biological growths that can stain the concrete.



The crack in these concrete steps has probably been caused by ground movement or root growth from nearby vegetation.

#### What to do

##### Remedial action:

- Seek advice from a conservation architect or, in the case of structural problems, a structural engineer.
- Arrange repair by a qualified tradesperson.
- Appropriate actions may include:
  - structural repairs in accordance with engineering advice
  - using cement mortar with a similar colour and texture to the concrete under repair
  - treating corroding iron or steel fixtures (refer to **Part B: Metals—iron and steel**)
  - removing roots that have penetrated the concrete
  - cleaning off biological growths as advised for stonework in **Part B: Cleaning your memorial.**

##### Prevent damage by:

- proper drainage and preventing water being absorbed into the concrete from the ground
- planting garden beds away from concrete structures—as the concrete can absorb water-borne salts from fertilisers and weed killers from garden beds
- removing shrub or tree seedlings from the immediate proximity of the structure avoiding a damp shaded environment around the structure.

## Tips on maintaining a memorial

If your community's memorial is entered in the Queensland Heritage Register, the following recommended activities are exempt from the need to seek approval. Refer to the General Exemption Certificate: Queensland Heritage Places and the General Exemption Certificate: War Memorials for the conditions applying to this work. (Refer to **Obtaining necessary approvals** in Step 4 in **Part A: The process**).

## Routine Maintenance

### Do (for monuments and structures):

- ✓ clear drainage channels and weep holes
- ✓ retouch painted timber, iron and steel—ensuring that the paint colour matches the original
- ✓ arrange to have any letters that are missing from inscriptions replaced by a monumental mason as soon as possible
- ✓ arrange for bronze and un-lacquered brass to be re-waxed every two-to-three years to prevent corrosion. Consult with a metals conservator before applying wax (Microcrystalline wax is best).
- ✓ refix or tighten loose elements
- ✓ treat termites and other timber pests quickly and repair damage promptly
- ✓ check and, if necessary, repair security lighting.

### Do (for landscapes):

- ✓ replace tap washers
- ✓ cut grass
- ✓ remove weeds
- ✓ remove shrub or tree seedlings growing close to, or on, monuments
- ✓ prune, fertilise and otherwise promote the health of original gardens and trees to prolong their life and maintain the intended landscape
- ✓ trim trees and shrubs to preserve original views to and from the memorial
- ✓ where practical, trim tree branches that overhang memorials
- ✓ replant gardens to match the original plantings
- ✓ check and, if necessary, restring flagpoles
- ✓ check and, if necessary, replace flags.

### Do not:

- ✗ paint or clear-finish statues or any stone element
- ✗ apply anti-graffiti coatings
- ✗ paint lettering
- ✗ use mechanical weed trimmers or brush cutters next to monuments or other structures
- ✗ attempt to carry out repairs to monuments, such as repointing masonry, without obtaining specialist advice
- ✗ use unskilled or unspecialised labour to carry out repairs.



On the following page is a recommended Inspection schedule that can be used as a basis for developing an inspection checklist that specifically applies to your memorial.

## Inspection schedule

Item	Check for
Inscription	<ul style="list-style-type: none"> <li>lost letters</li> <li>lost gilding</li> <li>reduced legibility of incised lettering</li> <li>lost or loose plaques</li> <li>lost or loose name plates</li> <li>inappropriate repairs such as painting, marking in or recutting old lettering</li> </ul>
Water-proofing	<ul style="list-style-type: none"> <li>damage to water-proof membranes</li> <li>roofing leaks</li> <li>water penetrating into the structure or stonework</li> </ul>
Drainage	<ul style="list-style-type: none"> <li>water logging (water on the ground should drain away from the monument)</li> <li>blockages in the drainage system including at:               <ul style="list-style-type: none"> <li>weep holes</li> <li>gratings</li> <li>channels</li> </ul> </li> <li>leaking taps</li> </ul>
Masonry	<ul style="list-style-type: none"> <li>missing parts</li> <li>dampness or water lying on stonework</li> <li>dampness or white staining (surface salts) on the base of monuments</li> <li>loose mortar and open joints</li> <li>cracking and spalling around iron fixtures</li> <li>delamination, flaking or crumbling</li> <li>cracking</li> <li>chipping</li> <li>graffiti</li> <li>bird droppings</li> <li>moss, algae, lichen or other biological growths</li> <li>stains caused by water flowing from corroding metal</li> </ul>
Metal	<ul style="list-style-type: none"> <li>bird droppings</li> <li>corrosion and oxidation</li> </ul>

Item	Check for
Timber	<ul style="list-style-type: none"> <li>moisture retention on timber parts</li> <li>chalky, flaking, cracked, blistering or stained paint</li> <li>cracking or splitting</li> <li>cracked joints</li> <li>failed fixings, for example nails or screws</li> <li>rot</li> <li>borer holes or frass               <ul style="list-style-type: none"> <li>galleries</li> <li>hollow timber</li> <li>bulging, staining or rippling of paint or timber</li> <li>frass</li> <li>discarded termite wings</li> </ul> </li> <li>crazed or deteriorating finishes</li> <li>mould or other biological growths</li> </ul>
Concrete	<ul style="list-style-type: none"> <li>cracking</li> <li>spalling</li> <li>moss, algae, lichen or other biological growths</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>root penetration of monuments</li> <li>diseased or dead trees or shrubs</li> <li>vegetation obscuring view lines</li> <li>vegetation overhanging monuments</li> <li>weeds</li> <li>seedlings growing on or near monuments</li> </ul>
Paving	<ul style="list-style-type: none"> <li>movement of paving stones</li> <li>cracked paving stones</li> </ul>
Gates	<ul style="list-style-type: none"> <li>impaired catches and hinges</li> <li>moving parts that require lubrication</li> </ul>
Services	<ul style="list-style-type: none"> <li>faults in security lighting</li> </ul>



## Tips for cleaning a memorial

If your community's memorial is entered in the Queensland Heritage Register, the following recommended cleaning methods are exempt from the need to seek approval. Refer to the General Exemption Certificate: Queensland Heritage Places and the General Exemption Certificate: War Memorials for the conditions applying to this work. Refer to **Obtaining necessary approvals** in **Step 4** in **Part A: The process**.

## Honour boards

Obtain advice from a relevant specialist (refer to **Part C: Contact relevant specialists**) before doing any work to an honour board, to avoid causing damage. It is important to understand the original finish and to ensure that this is preserved.

Suggested method to keep in mind when cleaning metal honour boards:

### Do:

- ✓ brush off loose dirt and grime with a soft bristle brush
- ✓ wipe with white spirits
- ✓ when dry, apply a microcrystalline wax.

### Do not:

- ✗ attempt to achieve a shiny finish
- ✗ use abrasives such as steel wool
- ✗ use liquid floor polishes, silicone waxes or Coca Cola
- ✗ apply lacquers or other clear finishes unless under the direction of a metals conservator.

For the timber elements of honour boards, limit cleaning to light dusting. If dusting is ineffective, obtain advice from a timber conservator.

### Do not:

- ✗ dust surfaces that are flaking or unstable
- ✗ apply waxes or coatings to the timber parts
- ✗ use oil impregnated cloths or brushes as these will leave residues.



The patina of this honour board has been cleaned off during repairs to lettering; this may expose the bronze to corrosion. Repatinating the bronze may prevent this taking place – this is a special skill that should only be undertaken by a specialist (refer to **Part C: Contacting relevant specialists**).

## Graffiti

Typical forms of graffiti include spray paint, marker pens, carving or scratching.

### Do:

- ✓ obtain specialist advice before attempting to remove. If the graffiti is on stonework, obtain advice from a stone or monumental mason.
- ✓ arrange to have it removed as soon as possible. The longer it is left the more difficult it will be to remove—and it will also encourage further graffiti.

### Do not use:

- ✗ anti-graffiti coatings as they may affect the permeability of the stone, leading to damage
- ✗ solvents to remove graffiti from stone as this will exacerbate the problem. Solvents will dissolve the graffiti causing it to bleed into the stone.

Specialists in graffiti removal will consider the type of paint or ink used and the type of material that has been defaced. Options available to specialists include using poultices or mild abrasives. A poultice is an absorbent material applied directly to the area that needs to be cleaned.

Prevent graffiti by improving security and night-time lighting around the memorial.



Get advice before trying to remove ink pen graffiti from sandstone.



The long-term effects of applying an anti-graffiti coating to sandstone: the outer layer of stone has lifted.

## Stonework

You may need to undertake gentle cleaning because your community's memorial has become unsightly or to prevent damage. Bird droppings, dirt and other pollutants can cause staining—and excessive biological growth such as algae, moss and lichens can retain moisture that causes damage.

### Do not clean unnecessarily

Inappropriate cleaning is a leading cause of damage to memorials. Never attempt to clean stone that's in poor condition. If cleaning is absolutely necessary, employ a stone or monumental mason with experience in conserving stone.

#### Excessive cleaning can:

- remove the stone's case hardening—the layer that develops naturally on old stone. Removing this exposes softer stone and accelerates deterioration
- cause stains or tide marks by mobilising salts in the stone
- promote corrosion of metal fixtures or ferrous inclusions causing staining or cracking
- cause absorption of dirty water into porous stone, creating stains.

## Clean gently and carefully in a controlled manner

This suggested cleaning method will minimise any risk of damage:

- Test the effects of cleaning on a small unobtrusive section of the stonework.
- Protect metal parts so they are not damaged during cleaning.
- If stone is in good condition, manually brush it down with a brush that has nylon or natural bristles. Never use a wire brush and do not brush stone in poor condition; employ a stone conservator if it requires cleaning.
- Commencing at the top of the memorial and working downwards, wash the stonework using minimum quantities of water and a soft cloth or brush.
- Use two buckets—one with clean water for applying to the memorial and the other for washing dirty cloths or brushes.
- Carefully control any dirty water run-off to avoid further streaking or staining.
- Mop up excess water.

## Take care when removing biological growths such as moss, algae and lichen

Lichen can cause damage to stone by generating acids, and by penetrating the stone and expanding and contracting. Scrubbing off live lichen can create unsightly pock marks that retain water and lead to further damage.

### Do:

- ✓ use a wooden spatula to remove excessive moss and algae.

### Do not:

- ✗ apply poisons without first consulting a stone or monumental mason with conservation expertise since this can lead to staining and damage
- ✗ attempt to remove lichen without the advice of a specialist if it is disfiguring or obscuring lettering.

Investigate ways to prevent biological growths by avoiding persistent dampness or moisture retention on the stonework.

## Obtain specialist advice if gentle cleaning fails

If controlled gentle cleaning fails to work, seek advice from a stone or monumental mason.

### Do not:

- ✗ use chemical cleaning products such as detergents, bleaches, solvents, strippers or other strong cleaning products as this will damage the stone
- ✗ use abrasives or wire brushes as this will permanently mark the stone
- ✗ use high-pressure water as this will damage friable stone and force water into joints where it will cause internal damage
- ✗ sand-blast the stonework.

## Metals

### Clean gently and carefully

Gently clean the metal parts of the memorial including war trophies.

### Do:

- ✓ remove dirt using a brush that has nylon or natural bristles
- ✓ remove bird droppings with a wooden spatula
- ✓ wash gently with a damp, soft cloth
- ✓ never use chemicals, polishes or abrasive tools such as wire brushes
- ✓ obtain advice from a metals conservator before using detergent
- ✓ arrange for a metals conservator to re-wax bronze and un-lacquered brass every two to three years
- ✓ remove debris from gun barrels.

### Do not:

- ✗ attempt to polish metals.

Memorial designers usually created metal components of memorials to have a sombre and dull appearance. The designer expected the metal to develop this patina over time. As well as enhancing the appearance of a memorial, the patina protects the metal and so should not be removed.



Esk War Memorial and Esk Memorial Park  
[QHR 600494]





APPROVED DESIGN  
WINDSOR WAR MEMORIAL

# PART C

## Additional information

Queensland State Archives Item ID: 2037538

## Contacting relevant specialists

### Conservation architects

Conservation architects specialise in conserving historic buildings and have a good understanding of traditional building techniques and materials. Contact the Australian Institute of Architects for more information—visit their website at [www.architecture.com.au](http://www.architecture.com.au)

### Conservators

Conservators have a high-level understanding of historic materials and how to conserve them. They normally specialise in a specific material. There are stone, timber and metal conservators. Contact the Australian Institute for the Conservation of Cultural Materials for more information—visit their website at [www.aiccm.org.au](http://www.aiccm.org.au). The Institute offers a searchable directory of conservators

### Historians

Historians can assist with researching and preparing a history of your memorial. They will provide well written fully referenced and illustrated material that not only explains its history but places it in its broader historical context. A professional historian has a minimum of an honours degree or equivalent in history from a recognised tertiary institution. Contact the Professional Historians Association (Queensland) for more information—visit their website at [www.qldhistorians.org.au](http://www.qldhistorians.org.au). The association maintains a register of consulting historians and their relevant experience.

### Historical archaeologists

Historical archaeologists research the history of human culture through the study of artefacts and other sources from the past to the present. A professional archaeologist has a minimum of an honours degree in archaeology from a recognised tertiary institution. Contact the Australian Association Of Consulting Archaeologists for more information—visit their website at [www.aacai.com.au](http://www.aacai.com.au) The association maintains a register of consulting archaeologists.

### Horticulturalists and arborists

Horticulturalists and arborists can help with vegetation management in or surrounding the memorial. Vegetation management, including pruning and root zone management should be guided by professional horticulturalists or arborists to ensure the right methods are used. Contact the Australian Institute of Horticulture or Arboriculture Australia for more information—visit their websites at [www.aih.org.au](http://www.aih.org.au) or [www.arboriculture.org.au](http://www.arboriculture.org.au) respectively.

### Landscape architects

Registered Landscape Architects who specialise in conservation work can provide advice on design and siting as well as vegetation management. They can assist with mitigating the visual impact of development adjacent to the site or external development within the view lines of the memorial. Contact the Australian Institute of Landscape Architects for more information—visit their website at [www.aila.org.au](http://www.aila.org.au)

### Monumental masons

Monumental masons specialise in carving stone monuments and inscriptions. Choose a monumental mason with experience and expertise in conserving and working with old stonework.

### Stone-masons

Stone-masons are tradespeople who are qualified to work with stone. Choose a stone-mason with experience and expertise in conserving and working with old stonework.

### Structural engineers

Structural engineers can provide advice if the memorial has major structural problems. Contact Engineers Australia (Queensland) for more information—visit their website at [www.engineersaustralia.org.au](http://www.engineersaustralia.org.au). If possible, choose an engineer with heritage experience. Engineering Heritage Australia (Queensland) (EHA (Q)) is a group within Engineers Australia interested in the contribution that engineering has made to Australia's history.

## Conducting further research

### Further information

For further information about conserving heritage places, visit EHP's website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) or contact the department on 13 QGOV (13 74 68) and ask to speak to a heritage officer in your region.

### Books and publications

Ashurst, John and Nicola, *Practical Building Conservation volumes 1 and 4*, (Aldershot: Gower Technical Press, 1988).

Department of Environment and Heritage Protection (Queensland) Heritage publications, [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au)

Department of Premier and Cabinet (Victoria), Preserving War Heritage Fact Sheets, [www.dpc.vic.gov.au](http://www.dpc.vic.gov.au)

English Heritage, Publications, [www.english-heritage.org.uk](http://www.english-heritage.org.uk)

Historic Scotland, Inform Guides and Short Guides, [www.historic-scotland.gov.uk](http://www.historic-scotland.gov.uk)

Inglis, K S, *Sacred Places: War Memorials in the Australian Landscape*, (Melbourne University Press: Carlton South, first published 1998, second edition, 2008).

Marquis-Kyle, Peter, and Walker, Meredith, *The Illustrated Burra Charter: Good Practice for Heritage Places*, (Australia ICOMOS: Burwood, 2004).

McKay, Judith, and Allom, Richard, *Lest We Forget: A Guide to the Conservation of War Memorials*, (RSL and Anzac Day Commemoration Committee: Brisbane, 1984).

New South Wales Public Works, *Caring for our War Memorials*, 2013, [www.publicworks.nsw.gov.au](http://www.publicworks.nsw.gov.au)

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013

War Memorials Trust (UK), *Helpsheets*, [www.warmemorials.org](http://www.warmemorials.org)

Young, David, *Technical Guide: Salt attack and rising damp. A guide to salt damp in historic and older buildings*, 2008, [www.dpccd.vic.gov.au/heritage](http://www.dpccd.vic.gov.au/heritage)

### Historical sources

The following recommended historical sources will help you research the original appearance of war memorials.

#### The Queensland Heritage Register

If your community's war memorial is entered in the Queensland Heritage Register—search for 'Queensland Heritage Register' on EHP's website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au). The entry includes a history of the memorial and a statement of its heritage significance. Further research material may be available from the department (refer to Further information).

#### Local historical societies

Local historical societies often have collections of historical photographs or newspaper clippings. These may include early photographs of memorials or newspaper reports of unveiling ceremonies containing descriptions of memorials.

#### Local studies section of the public library

Many public libraries have a local studies collection. This may include:

- books on the history of the district containing photographs or descriptions of war memorials
- historical photographs
- files of newspaper clippings on memorials or relevant events.

#### The photographic database at the Trove website

This is a database of historic photographs that is searchable by keyword—visit <http://trove.nla.gov.au/picture> to search the database.



## The digitised newspapers at the Trove website

This is a database of digitised newspapers searchable by keyword—visit <http://trove.nla.gov.au/newspaper/> to find material relating to the commissioning and unveiling of memorials.

## John Oxley Library at the State Library of Queensland

John Oxley Library contains the state's most comprehensive collection of material related to Queensland's history. As well as books, the library includes diaries, manuscripts, artworks, photographs, original maps and plans, and oral histories. The library's material is available for viewing in the John Oxley Library Reading Room at the State Library or online via its catalogue OneSearch.

## Fryer Library at the University of Queensland

The Fryer Library holds an extensive collection of books, manuscripts, theses, plans, oral histories and other published and unpublished material related to Queensland history, art and architecture. The library's collection can be searched via its online catalogue.

## Judith McKay Papers at the Fryer Library (The University of Queensland)

Call number UQFL2o8

These are the papers resulting from a state-wide survey of war memorials undertaken in 1983–86 for the RSL Queensland branch and funded by the National Estate program. The papers include survey sheets, historical information and photographs, as well as more recent photographs; the files for particular memorials being arranged by local government area.

