AVOIDING MONUMENTAL DISASTERS WITH STONE

Helen Lardner

Introduction

General Burra Charter conservation principles apply to monuments but sometimes additional specialist stone skills are required. The relationship between general conservation skills and specialist stone skills is not well established in Australia. The work of stone conservators and technologists has not been generally available in the past, with the result that conservation practitioners and the custodians of monuments have made decisions without understanding the longer term conservation consequences and without knowledge of a broader range of approaches available. Although Australia is a world leader in conservation philosophy and practice, our technical conservation skills need recognition and development.

The very nature of a monument is about recognition of significance and embodiment of collective values. Monuments are good Burra Charter stuff! We do not have to work hard to convince anyone that their physical fabric embodies cultural significance. It is much more difficult to convince people that the physical fabric, including the stone, will not last forever: it needs care.

There are many issues related to stone deterioration in monuments, such as inadequate footings; foundation movement; metal corrosion and expansion; biodeterioration; rising, falling and penetrating damp; joint deterioration; attack by pollutants; reaction between types of stone; salts, weathering and failure of the stone itself.

In this paper, I aim to demonstrate some of the links between general conservation action and specialised stone skills. I have provided a number of case studies, mainly from St Kilda in Victoria, to raise specific aspects of stone deterioration. I am grateful to David Brand for the use of his historical research material, undertaken for the City of St Kilda, about some of these monuments.

The Fairchild Drinking Fountain

The Fairchild Drinking Fountain was donated to the City of St Kilda in 1906. It is a square grey granite structure on a bluestone base, with a water basin on a pedestal, surmounted by a domed stone canopy on polished red granite columns. It has a drinking trough for dogs at the base. There is no record of the original plumbing, of which no visible fittings remain. A later inlet pipe is terminated at the dog trough.

A hole in the centre drains the basin. Inside would probably have been a central feeder carrying the water supply pipe to a junction point where the pipes to the four outlets originate. Currently, rainwater drains into the basin and is trapped there by litter that has been poked down the hole and other grime.

The reinstatement of plumbing would return the functional significance of the structure. This would protect the stone, if maintained, by regulating water flow. Without this action, the trapped water seeps out through the joints between the stone work, deteriorating the joints and creating staining. In the past, someone has applied a silicon sealant to the joints, temporarily trapping the water inside. This action, aiming to protect the stone, is having the opposite effect.

The stone will perform well where water can readily flow away. Areas which are kept damp promote deterioration and biological attack. It is usually easier to sacrifice the joints to protect the stone itself. In this case, after application of a silicon sealant, it will be difficult to re-establish one of the functions of the mortar; that is to allow moisture movement preferentially through the joint rather than the stone. A better conservation action would have been sealing the inlet in the basin immediately the plumbing was removed and leaving the joints to breathe.

The Isaac Jacobs Drinking Fountain

The Jacobs Fountain is similar in form to the Fairchild and also suffers from the removal of the plumbing. But unlike the Fairchild Fountain, which is well sited, the location of the Isaac Jacobs Drinking Fountain is a major problem. When it was installed at St Kilda Junction in 1909, the location was one of the commercial and civic hubs of the City. The Junction corner with Albert Park was once teeming with pedestrians, attending football at the Junction Oval or walking in the parklands at the corner reserve. Traffic engineers remodelled the Junction in the early 1970s. It is now an alienating environment for pedestrians, so that even if the fountain plumbing was reinstated, it would not be used. The fountain has also lost its visual function in the streetscape. Traffic barriers and Vicroads signal boxes have effectively masked the structure from street view.
The pitting of the granite surface of the stone and the formation of a hard grimey crust are legacies of the pollution from exhaust fumes at the Junction. This type of problem is common in highly industrialised environments but relatively rare in Australia. The deterioration of the stone is not helped by an unidentified previous treatment which has left a waxy stain on parts of the stone's surface, trapping grime beneath it. Until its removal, it will allow deterioration to continue. Restrict future cleaning operations and prevent the application of a surface consolidant.

Relocating the drinking fountain would be less costly than remodelling the road corner and moving the signal boxes. It would provide an escape for the stone from the intensity of the pollution at the Junction but would result in a loss of its association with its site. With the context for the monument irreversibly altered by changes to the Junction, retaining the fabric and reinstating the function are only possibilities at another location.

The Creswell Monument

In the Catani Gardens, near the Royal Melbourne Yacht Squadron, is the Creswell Monument which has been moved several times. Vice Admiral Sir William Creswell (1852-1933) was the founder of the Australian Navy. The original location of the monument is unknown although it has always been associated with the Yacht Squadron, so was probably nearby. The monument was erected about 1938. The dates of relocation are not known.

This monument has no footings. The pink granite pedestal and base sits precariously on the grass. The monument is also headless. Creswell’s bronze bust was stolen 20 years ago when the monument was vandalised. Only broken dowels crown the pink granite, although a bronze plaque remains.

The Yacht Squadron plans to commission a new bust and relocate the plaque to another location. This will be a sad ending to the original Creswell Monument: the bust lost, the marquette location unknown, the pink granite pedestal discarded and only the plaque remaining to refer to a non-existing object.

St Kilda War Memorial (Cenotaph)

The 1925 St Kilda War Memorial (Cenotaph), resulting from a design competition, won by G. H. Alsop, is an elaborate shaft of dressed freestone on a granite base and steps. It is a major monument on the foreshore, given more prominence by its position directly on the axis of Fitzroy Street.

To reduce the overall weight of the monument, the internal structure of the shaft is hollow with reinforced concrete supports. It is evident that there has been movement within the monument, and it is now well established in a cycle of cracking, expansion of reinforcing and further water penetration.

The stone is exfoliating in sheets, as well as experiencing surface loss, and biodeterioration problems are evident. Passers-by have contributed to the deterioration by knocking off stone sections.

The Cenotaph is potentially dangerous and rapidly deteriorating. Like many other monuments, it is not clear who has responsibility for it. After road widening consumed a portion of the Cenotaph’s forecourt in 1968, it became undesirable for memorial ceremonies to be held so close to the traffic. Some years later, the result was the commissioning of the Peter Shipperheyn War Memorial at Alfred Square. Now the Cenotaph has no official function. Litigation by a member of the public, hit on the head by falling stone, may be the unfortunate method of resolving the responsibility issue.

The stone conservation problems of the Cenotaph continue to escalate. The movement and water penetration cycle mentioned will only get worse without immediate action. As the stone surface is lost, the softer, more porous parts of the stone beneath are exposed. The condition of the monument at the time of the road widening is unknown. Perhaps the stone conservation skills were not available to treat it. However, the consequential developments are disastrous for the monument.

South African War Memorial

The 1905 South African War Memorial at Alfred Square was ostensibly by Arthur Peck but has been attributed to Robert Haddon because of the distinctive Art Nouveau style. The monument sits on a granite plinth and is a tall shaft, partly faced in faience work, with some decorative wrought iron.

Faience is a clay tile, usually glazed, which is a cladding. In this case, it is fixed to brickwork. The manufacture of faience leads to a fireskin surface; that is a hard, thin, vitreous surface, made from fine clay particles. Glazing fuses with the fireskin to create a durable, relatively impervious weather face with an attractive glassy appearance. Maintenance of this surface is essential as it prevents the porous materials beneath.

At the South African War Memorial, the glazed surfaces are pitted in many places, exposing the clay inside. There is evidence of some unsuccessful earlier repair works which have not been documented and the conservator is now faced with retarding deterioration of the faience and tackling an unknown substance which has been applied to many surfaces. Early intervention by a skilled practitioner may have prevented much of the deterioration.
The Burnett Memorial

To diverge a little from St Kilda at this point, a similar situation has occurred with the Burnett Memorial at the Melbourne General Cemetery. John Alexander Burnett was the first person to be buried in the cemetery in 1853. The monument is constructed of Barrabool sandstone which is deteriorating. Exfoliation of the stone is taking place in layers parallel to the surface, generally a few millimetres thick, to reveal a sandy, porous surface below. Small flakes have also formed which have either fallen or are barely attached. After the loss of some layers of stone, a surface coating of acrylic paint was used in some places to cover the exposed porous surfaces. This treatment has hastened the deterioration and would prevent the successful penetration of a consolidant. It would be very difficult to remove the acrylic paint without damaging the surface of the stone.

A stone mason could make a new Burnett Memorial using Barrabool sandstone and matching the detailing as sufficient survives to ensure accuracy. This is one of the confusions between the role of stone masons and that of stone conservators. A mason could make it as good as new. A conservator would retain it in its current state, aiming to retard further deterioration. A general conservation consultant would use Burra Charter methods to decide which action was appropriate or sometimes to combine the two. In the case of the Burnett Monument, where the significance lies in its age and its relationship with the first burial in the Cemetery in 1853, a brand new monument would be inappropriate.

Too many decisions are made about our monuments without sufficient concern for their long term consequences. Often decisions, such as the following, are made without the involvement of conservation practitioners or Burra Charter principles:
- abdication of ongoing responsibility for the monument;
- alteration to the context and setting of monuments;
- relocation of the monument; and
- alterations and treatments to the monuments.

Even with general conservation practitioners involved, there is a need for a framework to be developed which relates the problems above to Burra Charter principles and to technically skilled expertise in areas like stone conservation.

A framework for stone conservation would need to address at least the following issues:
- the roles of artisans or stone masons compared to general heritage practitioners and stone conservators;
- misconceptions about the application of impenetrable sealants or surface treatments trapping moisture within monuments and preventing further conservation treatments;
- cleaning methods which inflict physical damage to the surface of the stone or infuse harmful chemicals or salts into the stone;
- the need for adequate foundations and appropriate footings for monuments;
- joint treatments which prevent the sacrificial action of the joint with respect to moisture migration and structural movement; and
- the benefits in ongoing documentation of the condition and any alterations or treatments to monuments.

Without this, our monuments have a precarious grip on their ground.

Helen Lardner is on the steering committee for the newly established Save Outdoor Sculpture! Victoria project. Helen has worked in private practice and for the then Heritage Branch of the Department of Planning and Development. She is currently a member of the ICOMOS Education sub-committee.