

## Conservation and Industrial Archaeology: Recent Work by the National Trust (N.S.W.)

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*Australia has a rich and varied industrial heritage. Although numerous important sites have been preserved through well deserved state-funded conservation programmes, the future of many sites will depend on their capacity for financially viable continuing use. In this paper Richard Mackay, an archaeologist with the National Trust of Australia (N.S.W.), outlines some of the work of the Trust in identification of significant industrial sites and in liaison with their owners. The paper then examines a range of case studies which demonstrate different approaches to cultural resource management. In the case of privately owned sites, such as the Canterbury Sugarworks or Mittagong Maltings, it is suggested that conservation is best achieved through encouraging imaginative re-use by sympathetic owners. Public utilities like bridges or railways, however, must usually remain in their traditional use to survive. An exception to this general situation is presented in the last case study: the adaptation of an historic railway bridge to a modern cycleway.*

### INTRODUCTION

Australians are now becoming increasingly aware of the importance of our rich industrial heritage. It will be years before redundant industrial features, particularly those considered to lack any architectural or aesthetic merits, are viewed with the same reverence in this country as they are in the United Kingdom and the United States of America. However, the community as a whole is becoming more cognizant of the need to retain tangible relics and reminders of the workplaces of our forbears. The last decade has seen the establishment of a growing number of museums at industrial complexes and historic sites, selected specifically to ensure the preservation and interpretation of buildings and areas which highlight the industrial development of this country. The resources available to those wishing to preserve such sites (solely on the basis of their historical and technological merit), are far short of those needed to conserve even a representative sample of the total number.

The identification and conservation of highly significant sites in a range of industries must be a major objective of cultural resource managers. Survey and assessment of industrial sites is proceeding at a limited pace and there is a strong case for the allocation of additional funding for projects which identify those sites which are really significant and which warrant special conservation measures. The point which is stressed in this paper is not the enormities of the task of surveying and assessing these sites, for it should eventually be possible to consider systematically every identified industrial site. What is a more difficult issue, once the importance of a specific site has been established, is the need to find ways by which the on-going maintenance and, where appropriate, restoration of the site can be achieved. In a recent paper in *Heritage Australia*, Helen Temple outlined a convincing case for the preservation of significant industrial sites.<sup>1</sup> She briefly examined case studies of the conservation of a working industry, the conservation of an inactive site, and the rescue recording and analysis of archaeological artefacts as the products of industry. In the case of highly significant sites, state-funded conservation projects are one solution and sites which are considered of exceptional significance can be preserved as operational museums or as historic sites. A

number of government authorities are to be commended for their active role in the conservation of sites in this way. The New South Wales National Parks and Wildlife Service, for example, is doing excellent work at a number of mining sites, military installations and at Sydney's quarantine station. This treatment is very much a 'pure conservation' approach, albeit for public benefit. Such sites, however, are in the minority; moreover, the maximum capacity for operating industrial museums is fast approaching. Clearly, conservation will never be at a stage where every significant redundant industrial feature can be afforded such treatment.

This paper briefly describes the work of the National Trust in New South Wales in industrial site survey and assessment, and draws attention to the network of liaison committees which the Trust has established with relevant statutory authorities. The paper then examines a number of case studies involving various industrial sites in New South Wales (Fig. 1) which, though individually significant, are not all of outstanding heritage importance. These examples present a range of management options which have proven to be financially viable and others which have been unsuccessful. In all cases it has become clear that early consultation with the responsible authority is a vital prerequisite to any conservation action.

### MASTER LIST OF INDUSTRIAL SITES

Since 1978 the National Trust in New South Wales has (with the assistance of the National Estate Grants Programme) been actively involved in the compilation of a Master List of Industrial Archaeological Sites. This list now comprises approximately 1600 sites which have been brought to the attention of the National Trust and which are known to be, or are thought to be, of cultural significance as relics or other evidence of past industrial activity within New South Wales. Through its Industrial Archaeology Committee, the National Trust is engaged in the continuing task of inspecting and assessing the sites on the list. Although a number have been classified by the National Trust and listed in the National Trust Register, the rate at which sites are added to the Master List far exceeds the present capacity for survey and assessment. The Master List, therefore, serves a threefold purpose

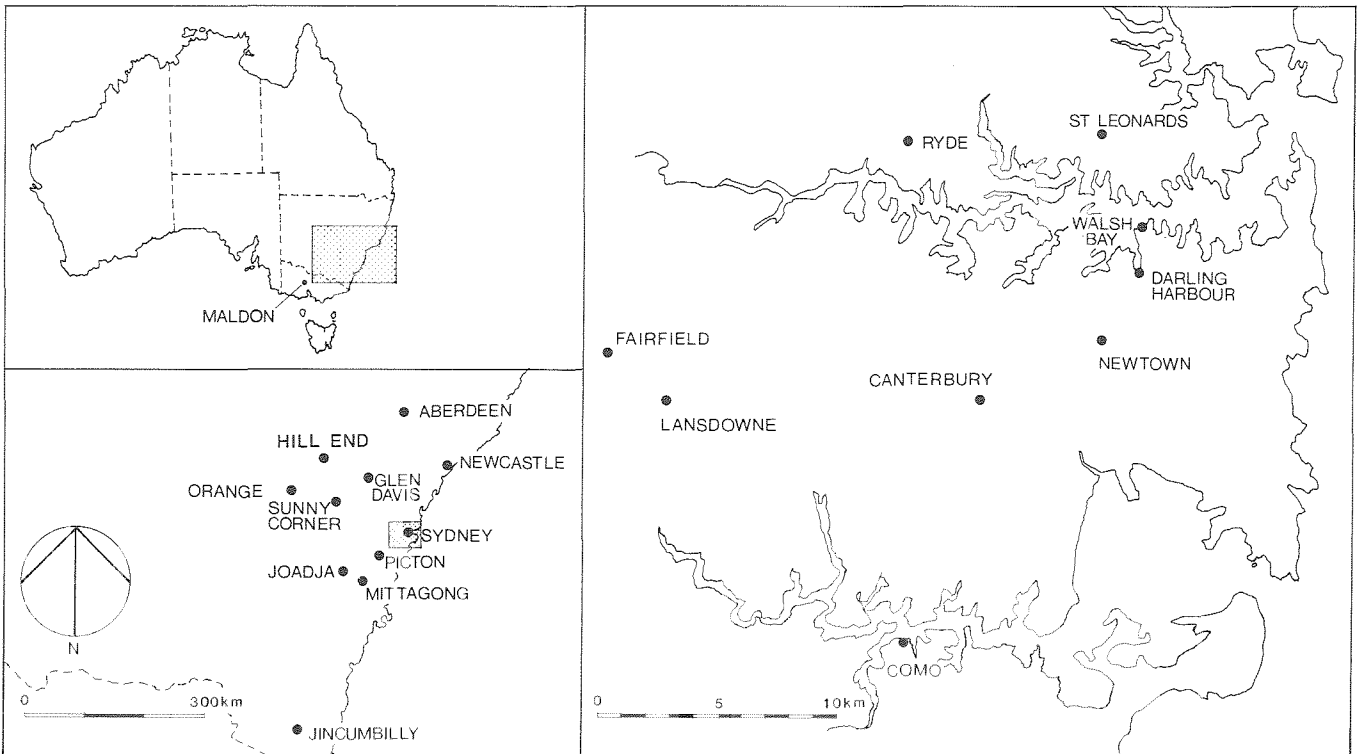


Fig. 1: Location of sites mentioned in the text.

in that it includes sites that are in the National Trust Register, sites which have yet to be assessed, and sites which although determined as not appropriate for inclusion in the Register are nevertheless considered of sufficient interest to require recording. Even in cases where all other data is lacking, the noting of a site's existence and location within the Master List is invaluable when the National Trust is called upon to comment on local environment plans or to advise on the environmental impact of proposed developments. The compilation of a comprehensive inventory, such as the Master List, is recommended as a vital first stage of any systematic process of survey and assessment.

## LIAISON WITH STATUTORY AUTHORITIES

One of the most productive aspects of the National Trust's effort in industrial archaeology has been the establishment of liaison committees, which comprise representatives of the Trust and different statutory authorities. To date, the National Trust has established these joint working parties with the Department of Main Roads, the State Rail Authority, the Maritime Services Board, the Water Board and the Electricity Commission. Regular meetings are also held with the Army and the Navy. In many cases, representatives of the Heritage Council of New South Wales are also invited to sit on these committees.

The liaison committees meet to discuss matters of mutual concern to the organisations represented and directly assist conservation by ensuring that heritage considerations are taken into account in the early stages of planning, before the plans of the statutory body concerned proceed to a point which is largely irreversible. In a similar way, the National Trust is made aware at an early stage of impending demolitions or closures and has the opportunity either to promote a scheme which ensures the conservation of the item concerned or to direct its efforts towards a similar item which is not under threat.

These working parties also contribute to the Trust's survey and assessment programme, by combining the liaison process with thematic surveys of sites controlled by the relevant authority. An important part of the procedure is active promotion of the benefits of this system to the authority

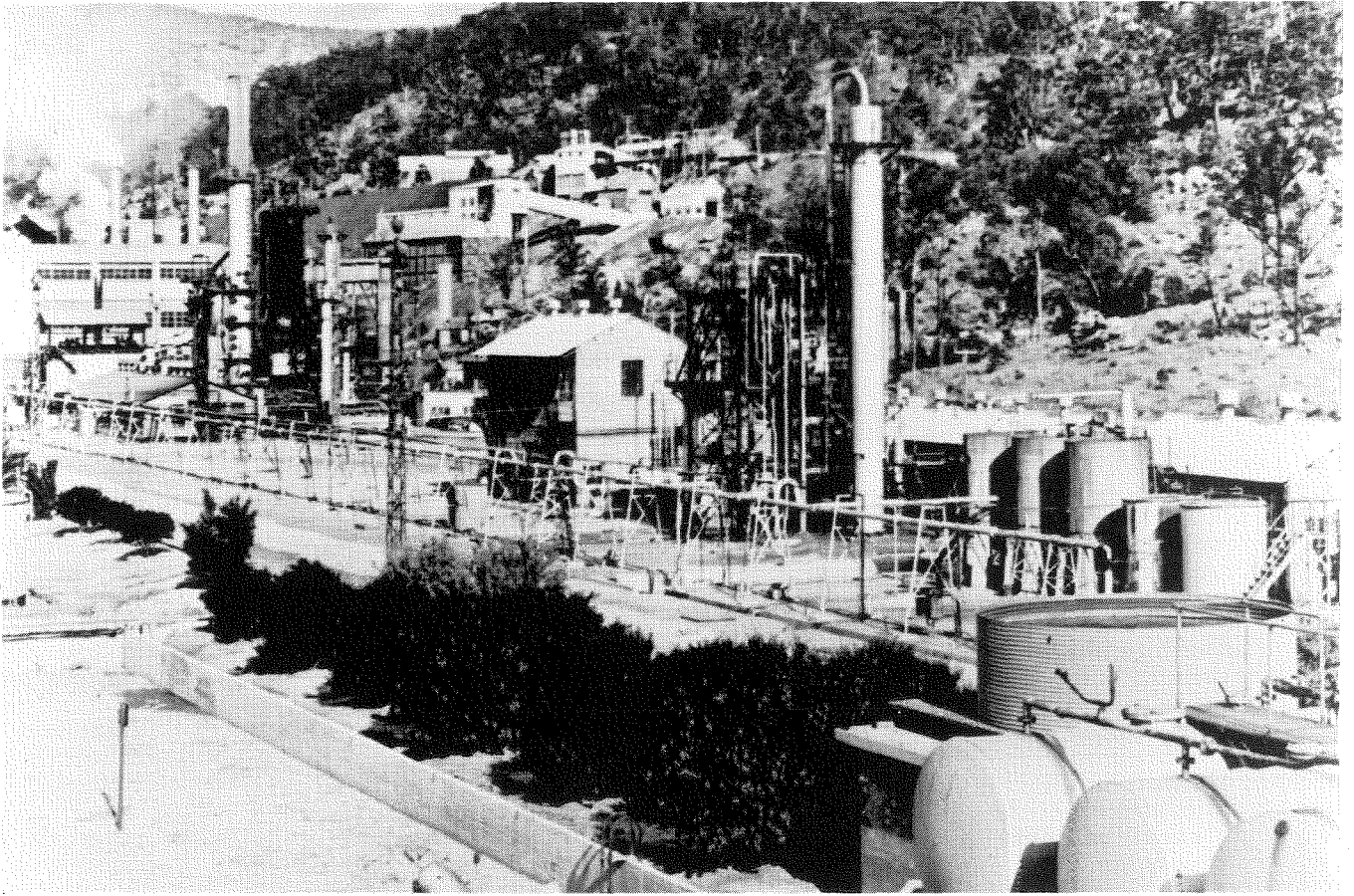
concerned. Active involvement of the authority's personnel in surveys is encouraged. In one case the National Trust even receives a small annual payment, to assist in the provision of advice on heritage matters provided through the liaison committee.

Through these liaison committees it is possible to encourage government authorities in the active roles which many are now taking in the conservation of industrial sites. It would be wrong to assume that the existence of these groups results in a perfectly satisfactory solution in every case. Strong differences of opinion still occur; the main advantage in such cases is that each party is well briefed on the situation in advance of the problem coming to a head.

## MINING SITES

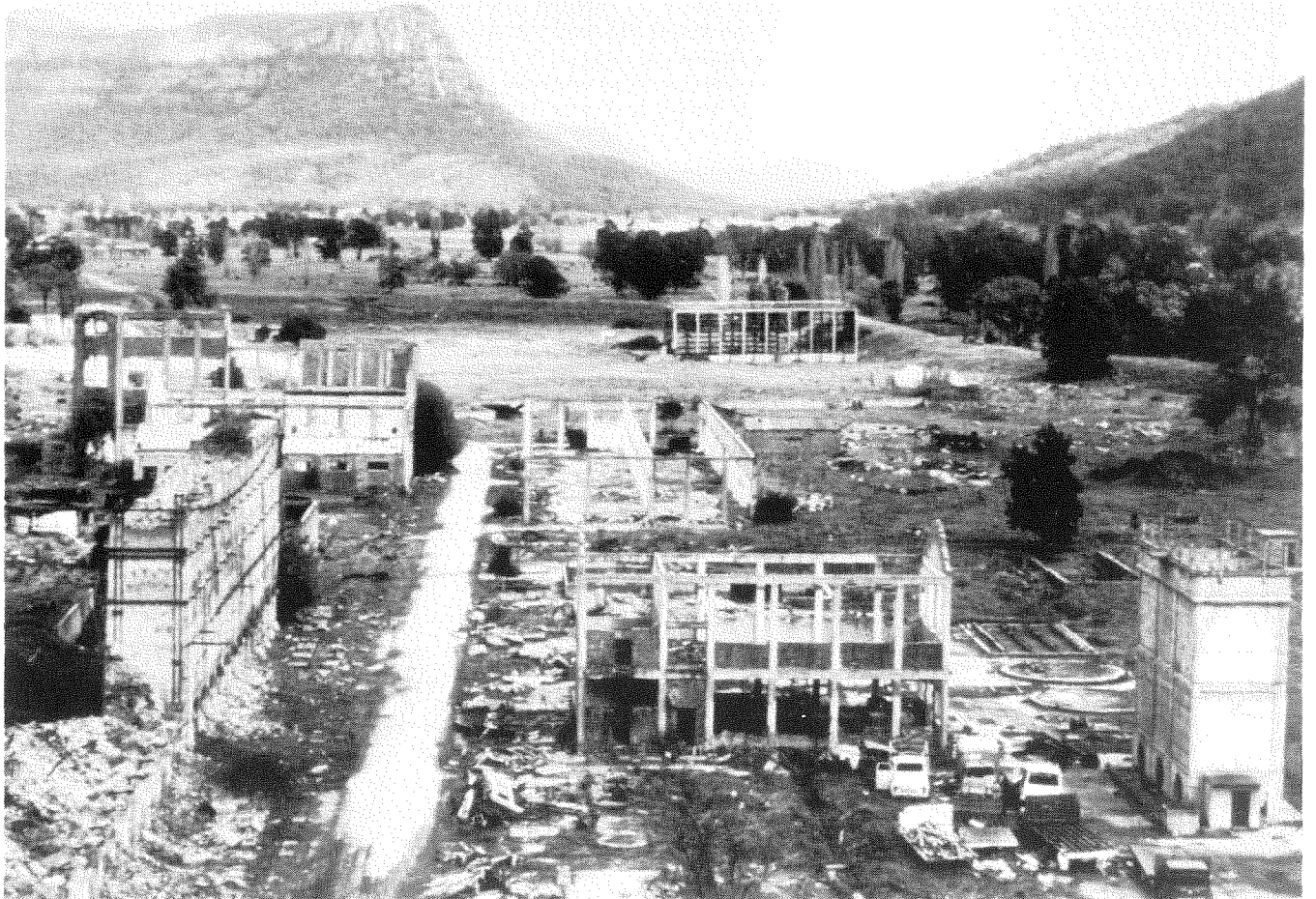
Redundant mining sites constitute on the one hand the least urgent problem for cultural resource managers, but on the other some of the most difficult. Sunny Corner Mining Site, near Bathurst, is a significant archaeological site for the mining industry in New South Wales. The site, as it stands, is essentially a scarred landscape which features remnants of the processes of mining and smelting in the late nineteenth and early twentieth century. It was one of the richest silver-mining areas in Australia and was worked using a wide range of innovative technologies, over an extended period. Today it provides a comprehensive insight into the development of the Australian mining industry. The significance of the site as a remnant of an important industrial activity is unquestioned.

The problem arises as to how to manage a site of this nature. In this case it is fortunate that the Sunny Corner mine remains stand on Crown land and there is therefore no direct financial pressure on the owners to make a return on the asset. In fact, the New South Wales Crown Lands Office has recently established a Sunny Corner Historic Sites Trust, which is administered by a group of concerned local residents. The establishment of the Trust should take care of the issues associated with the day-to-day site management but does not adequately deal with the financial and physical problems associated with the site. The most visible extant remains are a



*Fig. 2: Glen Davis. A general view of the valley and plant in 1949.  
Photograph by J. McAllister.*

*Below:  
Fig. 3: Glen Davis in 1985. Photograph by Phillip Simpson.*



spectacular chimney and flue erected in 1890, a ten-head stamper battery, a building constructed from bricks made of moulded slag, and the remains of recent works erected over earlier smelting sites. Present management procedures are to do nothing. While this is inexpensive, and easily managed by the newly established Trust, doing nothing is hardly a successful management option. The site is progressively degenerating, remains are becoming less and less discernible and identifiable, and eventually the chimney will become a public safety hazard. It may even be deliberately destroyed. This was the case at historic Templar's Mill near Orange, which was demolished by the responsible management authority, the local council. Ideally, the Sunny Corner Historic Sites Trust will acquire sufficient funds, from one source or another, to carry out those works which are essential to the long-term preservation of the site. I use the term *preservation* here in the way in which it is defined in the Burra Charter: 'Maintaining the fabric of a place in its existing state and retarding deterioration.'<sup>2</sup> This is one management option for a site of this type. It must be recognised that further activity, such as the provision of improved visitor access and interpretation facilities or even major stabilization works, are forms of *adaptation*,<sup>3</sup> and although often necessary or desirable are not strictly preservation. To this extent, adaptation may be an appropriate conservation measure at mining sites.

Mining sites with more substantial remains inevitably have more substantial problems. In New South Wales two sites of outstanding cultural significance are at Joadja and Glen Davis. Both are oil-shale mining and refining areas. The Joadja kerosene oil-shale refinery was one of the largest of Australia's early industries, reputedly employing over 400 people towards the end of the nineteenth century. The refinery at Glen Davis was the only attempt ever made in Australia to produce petrol commercially from shale. The technology used was unique in Australia and when it was operating there were only two other refineries in the world that were producing petrol from oil shale. Its extant bank of retorts is unique in the British Commonwealth and probably in the world. Glen Davis is one of the most impressive and informative industrial sites left in New South Wales, though ironically it is important as much as anything else for being a grand failure. Both Joadja and Glen Davis lie on what are now private landholdings. Joadja, being located close to the Hume Highway near Mittagong, receives by far the greater number of visitors. At each site the large number of standing structures allows industrial archaeologists to learn a great deal about early mining towns and about the technology of kerosene-oil mining and refining. Both sites are degenerating. A comparison of historic and current photographs at Glen Davis (Figs 2 & 3) is clear indication of the dramatic rate of decay and degradation. While it may be true that controlling the level of visitor access at both of these sites, and particularly at Joadja, has proved successful in limiting acts of vandalism (particularly removal of bricks), there are very few practical measures that can be taken to control natural weathering. It would be nice to think that sites of such importance as Joadja and Glen Davis could be afforded the same treatment as the North British Mine Site at Maldon in Victoria,<sup>4</sup> where a large amount of stabilization and measures for public interpretation of the site are planned. Unfortunately, the scale of funds required and the level of public funding available are so disparate that such measures can only be contemplated at sites deemed to be of outstanding importance. One case in point, in New South Wales, is at Hill End, where the National Parks and Wildlife Service has for a number of years been carrying out an extensive conservation and public interpretation programme. At other sites, and this represents the majority, all that can be hoped for is to control public access so as to discourage vandalism, and for sympathetic owners to undertake a minimum amount of stabilization and preservation work. Clearly, an increase in the amount of funding available through sources such as the National Estate Programme is also highly desirable.

## INDUSTRIAL BUILDINGS

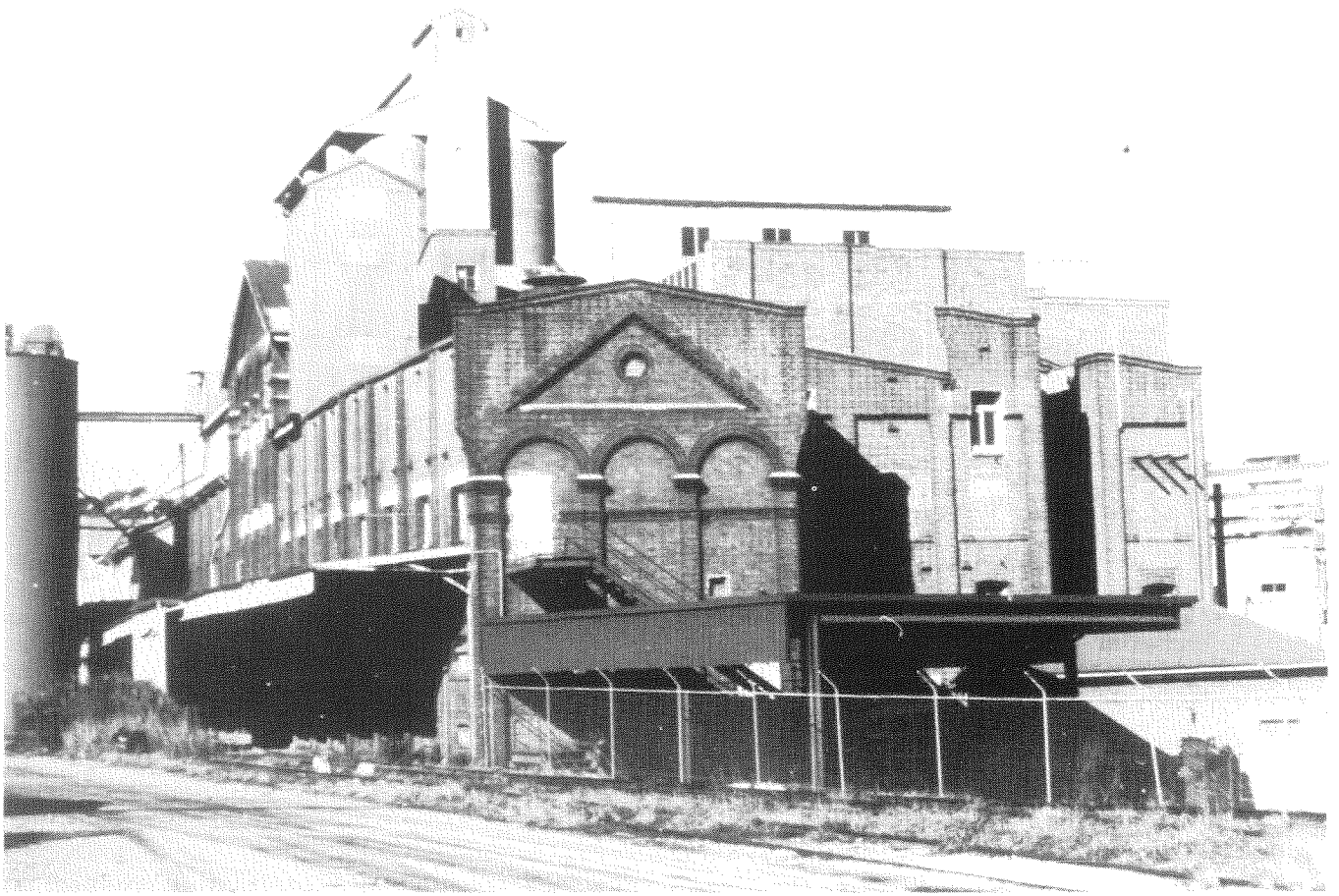
An extremely difficult management problem is presented by the innumerable early industrial buildings which are scattered through our major cities and country towns. Given a certain level of survey and assessment, it is possible to determine which are significant and worthy of preservation. Doing nothing or carrying out only essential stabilization and preservation works is, however, not really a management option. Such structures invariably require extensive and continuing maintenance if they are to remain structurally sound and safe. Insurance premiums for public liability policies must be paid, and finances must be found to pay council rates. Quite apart from these costs, the buildings themselves often stand on ground which is prime real estate and for which there is great pressure for other development.

In New South Wales the Heritage Act<sup>5</sup> has provisions whereby sites, structures or items can be given statutory protection and owners can thereby be compelled to retain them and keep them in good order. Action of this type is seldom the complete answer. On the one hand, it is often difficult to persuade the relevant authorities that a building with little obvious aesthetic or architectural merit is worthy of retention and on the other it is often possible for the owners to prove that the retention of such structures (particularly where rates and maintenance costs have to be paid), is an undue financial hardship.<sup>6</sup> Fortunately, significant tax and rating relief can be provided in some cases, at the instigation of the Heritage Council. The long term preservation of these buildings is, of necessity, best achieved if they are in the hands of sympathetic owners.

One case in point is the Australian Sugar Company mill in suburban Canterbury. The New South Wales Minister for Planning and Environment recently placed a Permanent Conservation order over this 145-year-old mill and its annexe. It is one of the most important industrial sites in Sydney, being the only industrial building in the area which survives from the goldrush era. Protection of this site in the long-term will, it is hoped, be achieved, not only because it has received statutory protection but more importantly, because the terms and provisions of the order were agreed beforehand with its sympathetic owner.

Industrial structures which are not so readily agreed as being of prime heritage significance, pose somewhat more of a problem. At Newtown, in Sydney, the Crago Flour Mill (Fig. 4) is an extremely prominent landmark, located beside the main railway line. It is considered to be important as a rare remnant of a whole series of mills built in the late nineteenth century, during a period of rationalisation of the milling industry. The fact that it was able to remain viable for most of this century is a tribute to its location beside an active railway and close to the city. However, its prime location and the value of the real estate on which it stands, is an asset in itself and now presents obstacles to the long-term retention of the site.

The milling company which owns the site is understandably not prepared to continue to pay maintenance and rates on a building which it regards as redundant. This is the dilemma. The site is not of such importance that it demands the expenditure of large amounts of public money, it is also beyond the financial resources of any local community heritage society, yet the bills must be paid. One option might be to transform the mill into a museum of milling technology but it is hard to justify the spending of such funds. Fortunately, one prospective buyer for the site has a proposal which involves retaining all extant structures, using some sections as artists' workshops and others as storage areas and offices. The attraction of this scheme is that it will allow a representative sample of the early equipment, which is still present on the site, to remain *in-situ*. Conversion of this site to offices, studios and storage space would be considered by many purists to be a rather unacceptable treatment of a culturally significant place. The point which should be emphasised is



*Fig. 4: Crago Flour Mill. A large industrial complex which is threatened by its valuable site close to the city and beside an active railway line. Photograph by S. Ungar.*

that, if a large number of sites of this kind are to be retained, it is necessary for the conservation movement to make significant compromises. Though highly desirable, *preservation, restoration and reconstruction*<sup>7</sup> are often financially impractical, particularly with regard to industrial sites. In many cases, therefore, it is necessary for significant *adaptation*<sup>8</sup> to be made to the site, modifying a place to suit the proposed compatible use. It should be emphasised that *adaptation* in this sense is perfectly in accordance with the Burra Charter<sup>9</sup> because in many instances conservation of a place would not otherwise be achieved and, if care is taken, the adaptation does not necessarily substantially detract from its cultural significance.

Without opting for adaptation it is not possible in the majority of cases to achieve the principle expressed in the Burra Charter that provision must be included for security, maintenance and the future of the place concerned.<sup>10</sup> The impracticality of trying to achieve conservation solely through statutory protection is clearly evidenced in the case of the Castlemaine Brewery at Newcastle. This complex of nineteenth-century industrial buildings of simple design and impressive proportions has stood in Newcastle's main street for more than a century.<sup>11</sup> The main malting house is a dominant feature of an imposing streetscape. Since being closed as an operational brewery, the buildings have undergone a range of uses, most recently as a city market. Some years ago the complex was in the process of being sold when a conservation order<sup>12</sup> was placed on the site by the New South Wales Minister for Planning and Environment. The sale fell through and proceedings were commenced by the owners to establish in court that retention of the buildings imposed an undue financial hardship. Despite some negotiations, during which it was conceded that some of the minor structures might be removed, no solution was achieved. Fortunately, the local council stepped into the breach, purchased the property (thereby waiving some

hundreds of thousands of dollars in back rates) and will develop the site as a military museum. Although this solution is most acceptable from the conservation viewpoint, it is an exception and there is little doubt that, had the council not acted, the attempt to protect the site by statutory measures may well have resulted in its demise.

One of the more interesting case studies in adapting industrial structures for re-use is another brewing site: the Mittagong Maltings. The Mittagong Maltings Complex was constructed along conventional English lines in the late nineteenth and early twentieth century and today has considerable cultural and historic value. Its viable use as a venue for the preparation of malt came to an end in 1980. At the present time plans have been prepared which propose conversion of the site in to a gymnasium and community centre (Fig. 5). This will require significant changes to the existing fabric of the building. The main building arrangement will, however, be retained. Some may view this as adaptation of the worst kind, and clearly restoration or reconstruction would be preferable. Restoration and reconstruction, however, are clearly economically unworkable and the choice is simply either to allow the building to suffer alteration on this scale or be destroyed.

## WHARVES

One recent and outstanding success story in adaptive re-use is the establishment of a new headquarters for the Sydney Theatre Company, in Piers 4 and 5 of the Walsh Bay wharves complex. The four finger-wharves and associated structures at Walsh Bay are a unique remnant of a number of such wharves built for the export-import trade early this century and feature several important engineering innovations. Visually

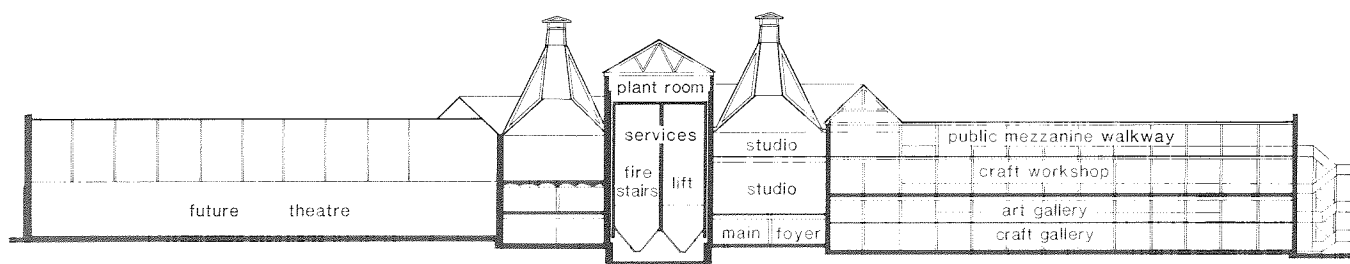


Fig. 5: Mittagong Maltings. Sections of Malthouse 1 and 2 showing proposals for adaptive re-use. Reproduced by courtesy of The Malting Pty Ltd.

the wharves have a distinctive character created by the use of heavy timber construction and regular layout of piles, columns, beams and cladding. Some years ago a rather gaudy and in many ways unsuccessful attempt was made to revamp the nearby Pier 1. This development is now considered to have involved too much physical interference with the existing building fabric, although it focused attention on these outstanding structures and their potential for recycling. It should be borne in mind that had the Pier 1 conversion not been undertaken and been a financial success, the recent treatment of Piers 4 and 5 would never have been contemplated. The development of Piers 4 and 5 is particularly outstanding because it has enabled the retention of the existing fabric, format and finishes of the historic wharf structure, while still allowing a new use which attracts large numbers of interested visitors. One measure of the success of the project was the subsequent appointment, by the Maritime Services Board of New South Wales, of a team of consultants which is preparing a redevelopment plan along similar lines for the other finger-wharves and the entire Walsh Bay precinct.

## RAILWAYS

New South Wales has approximately 35,000 sites and items associated with the history of the railways. A large proportion of these will become redundant during the next few years. Like other statutory authorities, the New South Wales State Rail Authority is required to dispose of its surplus assets and is not in a position to spend money on redundant items. Extra pressure for demolition is invariably applied by local divisional engineers who are anxious to reduce their maintenance workloads. Until only very recently it was the usual procedure that the divisional engineer concerned submitted a standard form which was stamped and signed and the item concerned was demolished. The existence of a liaison committee means that the National Trust and the Heritage Council at least have the opportunity to be part of the process during rather than after the event. Moves are currently in hand to streamline this process even further. When all is said and done, the situation with regard to railway sites is very much the same as for other industrial sites. Very few sites are so important that they can be retained and maintained, if no financially viable use can be found.

Already in New South Wales a number of historic station buildings have been made available to private lessees for adaptive re-use. The restaurant within the old stationmaster's residence at St Leonards, in Sydney, is one example. Better still are cases such as Fairfield Railway Station, also in Sydney, (built in 1856 and the earliest building on the network), which despite their age can be retained as operating facilities. The main thing in these cases is persuading the State Rail Authority to undertake maintenance procedures which respect the existing culturally significant fabric of the item, while at the same time satisfying safety and passenger comfort requirements. Of our four underground stations in metropolitan Sydney, two have been 'converted' by excessive use of terrazzo tiling, orange plastic seats and modern platform furniture, resulting in a finish which is aesthetically no improvement on the original design. Largely at the instigation of the National Trust, the State Rail Authority is to retain the magnificent art

deco features of the remaining two stations. It has in fact been shown to be more economical to clean and patch existing tiling, rather than to replace it.

Retention in working order and in operation is one means of conserving railway structures. Redundant railway buildings are not so easy. The precast-concrete, second-class goods forwarding shed at Jincumbilly near Cooma is no longer used. It was drawn to the attention of the National Trust during 1984 and was proposed for demolition. To the surprise of all parties concerned, a petition with 900 signatures appeared in State Parliament. Apparently the Jincumbilly shed's main cultural significance is its size and isolation. It is unlikely that the building would be included in the Register of the National Estate; it has not been recommended for inclusion in the National Trust Register. It is surplus to the needs of the State Rail Authority and there are no funds available for its upkeep. To date, no final satisfactory solution to this problem has been found but the Rail Authority has at least agreed to postpone indefinitely its demolition.

Equally difficult from a cultural-resource-management viewpoint are large workshops and goods sheds. As part of the New South Wales Government's Bicentennial Celebrations, a major redevelopment is being undertaken at Darling Harbour in Sydney. Unfortunately, an integral part of this development was the passing of a special Act of Parliament which, amongst other things, permitted the complete demolition of the Darling Harbour Railway Goods Yards. The structures removed included a unique double-tiered goods shed, a cast-iron wharf and a curved woolshed; through which for years the State's wool was handled. It is not relevant here to examine the myriad of issues involved in the Darling Harbour redevelopment, except to note that it was never suggested by conservationists that *all* of the features of this site had to be retained. However, in this case the planners involved had a marvellous opportunity, not only to conserve a most important component of our industrial heritage but also to re-use a tremendous historical resource. The irony is that several of the structures proposed for Darling Harbour are of a size and floor area similar to the historic structures that were demolished to make way for them.

## BRIDGES

In New South Wales some of the National Trust's greatest successes in cultural resource management have been in negotiations with the bridges section of the Department of Main Roads. One of our most historic bridges is Lennox's Bridge at Lansdowne, built in 1836. The historic value of this stone bridge is beyond doubt but it is outstanding for another reason also. Despite its age, it still carries one lane of the Hume Highway between Sydney and Melbourne: a marvellous tribute to the skill of its designer. It is tangible evidence that historic bridges are best preserved in their traditional use.

Timber bridges generally have a shorter working life. In New South Wales there are over 100 timber-truss bridges, more than 10 times the number in the rest of Australia. This is

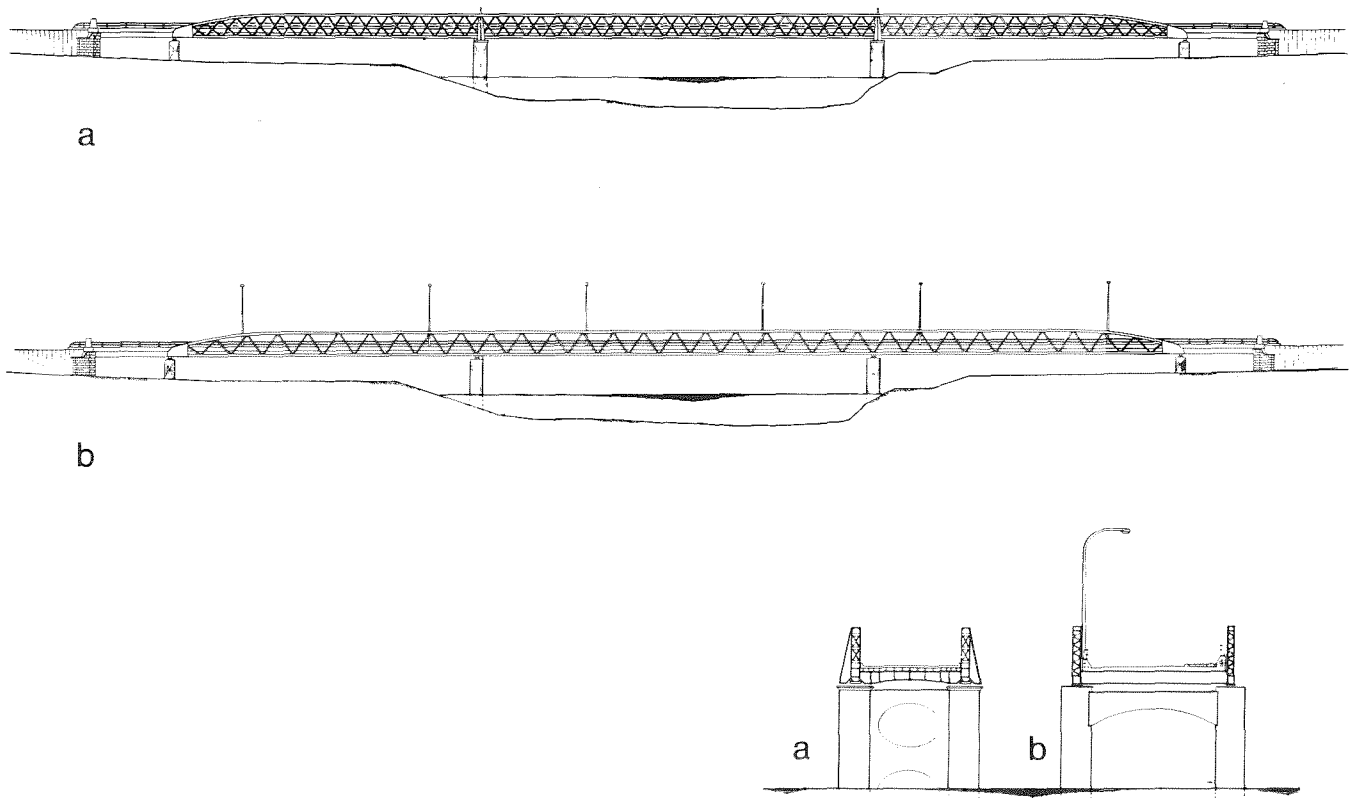


Fig. 6: Lattice girder road bridges at Aberdeen. The new bridge (b) has spans, pier alignment and design similar to the old bridge (a) but utilises modern steel technology. Reproduced by courtesy of McMillan Britton & Kell Pty Ltd.

a result of the imagination and innovation of early public works engineers and the quality of local timbers. The replacement of members is a traditional and continuing part of the maintenance of a timber bridge and it should be borne in mind that a timber bridge seen in the 1980s differs in its fabric from the same bridge in the 1890s, even if the design is the same.

One important achievement of the New South Wales Department of Main Roads has been the commissioning of a manual on the maintenance of timber-truss bridges. The Department is to be congratulated on this initiative, which will not only promote the preservation of these important items but will also be a cheaper solution to traffic-management problems.

One timber-truss bridge which illustrates an interesting management option, is the de Burgh's Bridge across the Lane Cove River at Ryde. This bridge, an unusual 'de Burgh' truss, was initially owned and maintained by the New South Wales Department of Main Roads. More recently, however, it has been owned and maintained by the Sydney Water Board because the bridge has been used to carry a large water-main. The Water Board now has an alternative water-main available and wishes to dispose of the bridge. The present proposal is that it should be transferred to the control of the State Recreation Area within which it is located and that it should be maintained in perpetuity as an historic site. Should this occur, it would indeed be the first instance in this country of its kind, although a number of precedents exist in the United States of America.<sup>13</sup>

The establishment of a local trust is one conservation management procedure which has proved extremely successful in the case of the Maldon Bridge near Picton.<sup>14</sup> This bridge, one of few real suspension bridges in New South Wales, was constructed by E.M. de Burgh in 1901. The bridge has been de-commissioned by the Department of Main Roads. Through a Heritage Council initiative, a local trust was established by the Department (using funds allocated for the bridge's demolition and additional Heritage Council funding). The Maldon Bridge Trust Fund, which is managed by Wollondilly

Shire Council, pays for the maintenance of the bridge for pedestrian use. It is hoped that it will be possible to establish a similar local trust fund to achieve the preservation of the Gundagai road and rail viaducts.

By far the most innovative and successful of recent plans by the Department of Main Roads to retain historic bridges in use is at Aberdeen in the Hunter Valley. This bridge is renowned for its elegant lines, well-balanced design, cast-iron piers and stone abutments. It has been a prominent landmark for a century. In this case it was clearly established that the existing bridge was inadequate for the volume of traffic but was perfectly capable of carrying expected traffic loads. Initially the construction of a replacement bridge was contemplated. It was, however, decided that the construction of a duplicate bridge would best serve the interests of both users and conservationists. The Department employed consultants who designed a new bridge which has similar spans and the same pier alignment and general design details as the existing bridge but incorporates modern steel technology (Fig. 6). The only readily perceived difference is that the old bridge features a lattice truss and the new bridge a Warren truss. Together, the old and new bridges will be adequate for traffic needs well into the next century, but more importantly, the new bridge complements rather than intrudes upon the visual qualities of the old bridge.

An even more imaginative concept has been used in achieving the preservation of the historic Como to Oatley railway bridge across the Georges River, south of Sydney. This bridge, which is 100 years old, is the longest single-track lattice-girder rail bridge in New South Wales. The bridge is surplus to the requirements of the State Rail Authority and its ownership has been transferred to the Sydney Water Board, as it carries two large water-mains. Until recently, the Board was proposing the removal of a number of the distinctive

structural members which make this bridge significant. The National Trust has co-ordinated discussions between nine different statutory authorities: including local councils from both sides of the bridge, the State Rail Authority, the Water Board, the State Bicycle Advisory Committee and both state and federal Departments of Employment. These discussions have resulted in the construction of a cycleway across the bridge, creating a significant amount of employment, providing a worthwhile community facility, and inspiring the Water Board to restore the bridge thereby achieving its long-term preservation. The bridge cycleway was officially opened on 15 December 1985 (one day short of the bridge's centenary), and it is a tribute to what can be achieved when bureaucracy is encouraged to work in the cause of conservation.

## CONCLUSION

New South Wales contains an extremely rich industrial heritage; more culturally significant sites than it is possible to preserve or restore. For this reason, it is of paramount importance that comprehensive survey and identification programmes are undertaken which identify those sites which are of such importance that conservation through preservation, restoration or reconstruction is justified. Although not dealt with at any length in this paper, sites of this calibre clearly deserve all the effort and resources which can be devoted to them. It is also desirable that these sites are identified at an early stage.

However, significant industrial sites are too numerous for all to warrant 'pure conservation'. In many cases it is therefore necessary to accept adaptation. While statutory protection provisions are available in some cases, co-operation on the part of sympathetic owners has been shown to be a more effective means of achieving an appropriate solution. Advance planning with owners and authorities, and provisions for financial incentives, can contribute to the feasibility of a project. Ultimate success of any scheme, from both a conservation and financial viewpoint, will depend on the production of an imaginative solution.

## ACKNOWLEDGEMENTS

This paper, which was originally presented at the 1985 Conference of the Australian Society for Historical Archaeology, has benefitted considerably from discussion with Michael Pearson, Helen Temple, Judy Birmingham, Chris Pratten and Siobhan Lavelle. Much of the data presented has been researched by Tony Brassil and the members of the National Trust Industrial Archaeology Committee. Though this assistance is gratefully acknowledged, any errors, omissions or contentious suggestions are my own.

## NOTES

1. Temple, H. 1985. Trash and treasure: the conservation of the industrial relics of New South Wales, *Heritage Australia* 4 (1): 22-7.
2. Australia ICOMOS adopted the Burra Charter (as revised) on 23 February 1981. For a full explanation of the development of the Charter and of the principles it contains, see: Kerr, J.S. 1983. The Burra Charter of Australia ICOMOS, in Bourke, M., Lewis, M. & Saini, B. (eds) *Protecting the past for the future*, Proceedings of the UNESCO Regional Conference on Historic Places, Australian Government Publishing Service, Canberra: 220-27.
3. Kerr. op. cit.: 222.
4. An account of the work at the North British Mine Site, Maldon, was presented by Christopher Davey at the 1985 Conference of the Australian Society for Historical Archaeology. (A paper based on that presentation is included in this volume; Editor.)
5. *Heritage Act*, (New South Wales), 1977 No. 136, reprinted 22 August 1979. This Act, amongst other provisions, provides for the making of conservation instruments or orders. These may be Permanent, Interim (2 years duration) or Stop Work (28 days duration), and are made as appropriate over items deemed to be components of the State's environmental heritage by the Minister administering the Act, at the recommendation of the Heritage Council of New South Wales.
6. Section 41 of the Heritage Act (op. cit.) provides for the submission of an objection by the owner of a place recommended for a Permanent Conservation Order (see Note 5 above) on a number of grounds. These include causing of undue financial hardship or rendering of the building, work or relic incapable of reasonable or economic use. In such circumstances, the Minister responsible for administering the Act appoints a Commissioner to hold an inquiry, and makes a final determination based on the evidence as summarized by the Commissioner.
7. Kerr. op. cit.: 222.
8. *ibid.*
9. Article 20: *ibid.*: 225.
10. Burra Charter Article 2: 'The aim of *conservation* is to retain or recover the *cultural significance* of a *place* and must include provision for its security, *maintenance* and its future.'
11. Bairstow, D. 1985. The Castlemaine and Great Northern Breweries, Newcastle, New South Wales, *Australian Journal of Historical Archaeology* 3: 70-78.
12. See Note 5 for explanation.
13. See for example: Anon. 1984. 4846 keeps on truckin, *Society for Industrial Archaeology Newsletter* 13 (3 & 4): 6.
14. For an account of the Maldon Bridge Trust arrangements see *Heritage Council of New South Wales Annual Report 1983*, Heritage Council of New South Wales, Sydney: 38.