'All That Glisters...': Assessing the Heritage Significance of Mining Places

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The paper is concerned with the way in which mining places are assessed for their heritage values in Australia. The recent shift to legislated and administratively adopted assessment criteria by the States and Territories, echoing those used for the Register of the National Estate, is outlined, and the criteria are described using recent examples of assessments.

'Not all that tempts your wand'ring eyes
And heedless hearts, is heritage prized;
Nor all, that glisters, gold.'

(with apologies to Thomas Gray, 'Ode on a distant Prospect of Eton College')

THE CONTEXT FOR ASSESSMENT OF SIGNIFICANCE

What is heritage significance and why do we try to define it? Heritage – those things we want to keep, enjoy or learn from, and pass on to the next generation – includes many aspects of our cultural environment, among them being mining places. A 'place' in this context is a site, area, building or other work, group of buildings or other works together with associated contents and surrounds.[1] However, our cultural environment contains a multitude of 'places', and all are not of such value to us that we wish to retain them and pass them on: they are not our heritage. One way in which we separate places with heritage value (or 'cultural significance') from the rest is to evaluate the places against a series of criteria which will help us identify any heritage values they may have.

Of course, in the case of many places with heritage value the fact that they are of value to the community is demonstrated, without analysis by specialists, by the way the community holds them in high regard. It is still useful, however, to subject even these obviously-valued places to assessment against criteria, as defining the nature of the particular values of the place can help in deciding how to look after it in order to protect those values.

The heritage values we ascribe to places are human constructs, not immutable qualities inherent in the place, and they may change over time as the contexts of knowledge and community association change.[2] For this reason alone, archaeologists and other practitioners need to be clear about why they want to ascribe cultural significance to a particular place, and within what framework they have assessed that significance. In the case of mining sites, some practitioners find it hard to accept that a place may have little or no heritage value when its significance is thoroughly analysed, and choose instead to base claims of heritage value on poorly explained and supported arguments. At one end of the assessment spectrum, as an example of an acceptable claim, might be that 'the Acme Mine was the largest producer of wolfram in Australia, and has an exemplary array of intact original mining equipment' — at the other end of the spectrum, as an unacceptable claim, might be that 'the Dismal Mine, despite the loss of all its equipment and the collapse of its only adit, is the only surviving mine of the Spectacular Goldfield, the seventeenth largest gold producer in the State's history'.

Other practitioners fail to recognise that identifying the historical associations of a place is, by itself, usually not a valid basis for assessing places for conservation purposes, and that the place has to be shown to have physical evidence which reflects or demonstrates that historical value.

Heritage assessment, like many other aspects of modern life, is a process codified by government and its bureaucracy. The concept of cultural significance is embodied in legislation and administrative guidelines, which form the framework for assessment, and this paper utilises that framework. Commonly, legislation defines heritage places as having aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community.[3] This general definition is then expanded upon by the use of criteria to detail how a place might be significant. For the purposes of this discussion, the criteria of the Australian Heritage Commission, which have been the basis for similar criteria now used by most states, will be applied to mining places later in the paper.

One point which should be engraved on the mind of every would-be assessor of heritage places, including mining places, is that it is imperative to separate the process of significance assessment from that of management decision making. While management decisions should not be made in the absence of a knowledge of significance, the assessment of significance can become very clouded if it is mixed up with making management decisions at the same time. The use of criteria as a framework for assessment maintains the focus on issues of significance, and should help the assessor be alert to situations in which management issues are raised in the guise of significance assessment. It should also be remembered that significance is not the only factor influencing management decision making, and that the assessment that a place possesses significance does not automatically determine that it will be conserved and managed to protect that significance. The relationship between significance assessment and conservation/management decision making has been discussed elsewhere.[4]

APPROACHES TO THE ASSESSMENT OF MINING PLACES

While much assessment in Australia is now codified by criteria established under heritage laws, there are any number of other ways in which mining sites could be assessed. For the purposes of this discussion, mining sites are defined as being the places where mineral resources are extracted and processed: simply put, 'mines and mills'. Until the late 1970s few mining sites

were assessed against explicitly stated categories or criteria. Since the Australian Heritage Commission Act 1976 defined what constituted the National Estate, and that definition was incorporated into the Burra Charter by Australia ICOMOS in 1979, various assessments have structured themselves around the concepts of historic, scientific, social and aesthetic significance contained in those definitions.

A few examples show the range of approaches taken over the last decade. The assessment of the Sons of Gwalia Mine in Western Australia in 1985 hinged on the significance of the place through historical associations, innovation in the technology of the mine, and the rarity of some of its elements.[5] The Coal Mines on Tasman Peninsula in Tasmania were assessed in 1987 on the basis of their historical associations, rarity and archaeological potential.[6] In 1989 Peter Bell used the concepts of 'technological distinctiveness' and 'cultural distinctiveness' as elements in understanding the historical context of mining places.[7] At the Junction Mine in Broken Hill, New South Wales, the 1990 assessment covered (without explicit criteria or categories being stated) historical association, rarity, representativeness in terms of mining changes over time and survival of key elements of the site, research potential and interpretative potential (ie the power to demonstrate).[8] In Victoria a series of major mining site surveys commenced in 1990, and a series of criteria were devised by David Bannear for the project, based loosely on criteria used by the Australian Heritage Commission and other criteria, and divided into categories of historic, scientific and social values.[9] The Lisle-Denison goldfields in Tasmania were assessed in 1993 using historical, archaeological/scientific, and social significance categories, with an overlay of assessment of rarity and representativeness,[10] while in the same year the Chillagoe Smelter in Queensland was assessed by Justin McCarthy and Peter Marquis-Kyle using the statutory criteria established under the Queensland Heritage Act, which parallel those of the Australian Heritage Commission, outlined below.[11]

The last of these examples, using statutory criteria, is the way most assessment is likely to be done in the future where heritage evaluation is a major component of the work. All the other examples were undertaken before new heritage legislation incorporating criteria was enacted in the particular state. Since 1990, all State heritage agencies (in the historic environment field), with the exception of Victoria and Tasmania (legislation passed but not proclaimed at time of writing, 1996) have progressively adopted criteria through statutory or administrative action.

In New Zealand a parallel process has occurred, though without the statutory component. Ritchie[12] has outlined his efforts to address the issue of what constitutes a mining place (ie. is it a set of numerous components which make up a single place, or a number of places which are interlinked in some way), and the use of what constitute criteria in the assessment of mining places. One of the main bases for assessment used on the Hauraki goldfield was historical significance, which was seen as primarily concerned with the evaluation of the place, industry or company's local, regional or national impact during its heyday and aftermath, and other factors such as representativeness, rarity, scale, productivity, longevity, technical and engineering innovations, socio-economic impact and influential personalities associated with the place. Another aspect of significance evaluation was the potential for interpretation development of the place, that is, its ability to be presented to the public.[13] As outlined below, this author does not regard the interpretative potential of a place as a heritage assessment criteria, but rather as a management opportunity. Demonstrating that a place can be readily presented to the public does not constitute a heritage value, though it may be a major issue in making management decisions about a place's conservation.

ASSESSING MINING PLACES USING CRITERIA

The discussion which follows draws upon a number of sources, particularly the recent work of Peter Bell in Tasmania[14] and the author in Queensland.[15]

The criteria used to assess places for entry in the Register of the National Estate are as follows.[16] The sub-criteria presented here are only those applying to the cultural environment. Other sub-criteria for the Register apply to natural places.

Criterion A: Its importance in the course, or pattern, of Australia's natural or cultural history.

Sub-criteria:
- Importance in exhibiting unusual richness or diversity of flora, fauna, landscapes or cultural features.
- Importance for associations with events, developments or cultural phases which have had a significant role in the human occupation and evolution of the nation, State, region or community.

Criterion B: Its possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

Sub-criteria:
- Importance in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practiced, in danger of being lost, or of exceptional interest.

Criterion C: Its potential to yield information that will contribute to an understanding of Australia's natural or cultural history.

Sub-criteria:
- Importance for information contributing to a wider understanding of the history of human occupation of Australia.

Criterion D: Its importance in demonstrating the principal characteristics of (I) A class of Australia's natural or cultural places; or (II) A class of Australia's natural or cultural environments.

Sub-criteria:
- Importance in demonstrating the principal characteristics of the range of human activities in the Australian environment (including way of life, custom, process, landuse, function, design or technique).

Criterion E: Its importance in exhibiting particular aesthetic characteristics valued by the community or cultural group.

Sub-criteria:
- Importance for a community for aesthetic characteristics held in high esteem or otherwise valued by the community.

Criterion F: Its importance in demonstrating a high degree of creative or technical achievement at a particular period.

Sub-criteria:
- Importance for its technical, creative, design or artistic excellence, innovation or achievement.

Criterion G: Its strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.

Sub-criteria:
- Importance as a place highly valued by a community for reasons of religious, spiritual, symbolic, cultural, educational, or social associations.

Criterion H: Its special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.

Sub-criteria:

- Importance for close associations with individuals whose activities have been significant within the history of the nation, State or region.

These Criteria are very similar to those adopted by (at the time of writing) all but two of the States and Territories,[17] and one of the exceptions, Tasmania, has passed but not yet proclaimed (1996) legislation which incorporates such criteria, while the other, Victoria, is reviewing its legislation. In some of the state criteria (NSW, for example, which has administrative rather than legislated criteria), the issue of integrity is also highlighted—a place may satisfy one or more of the criteria, but if it lacks physical integrity to the point where it cannot demonstrate that significance, the place would not be eligible for listing in a register. It is important, however, to distinguish between significance and condition, and not to allow issues of condition to cloud judgements about significance. What a knowledge of integrity will allow are better judgements about thresholds (for example, an item of technology which has poor integrity might not reach a threshold for demonstrating representativeness), while knowledge of condition allows better judgements about protection and management of a place, once significance is established.

The Australian criteria were to a degree based originally on the criteria established for the US National Register of Historic Places, and discussion of the application of those criteria to mining sites has interesting parallels to discussions now going on in Australia, especially in terms of defining the scope of the 'place' that is being assessed, in defining what constitutes research significance, and in working out how association with important individuals relates to mining sites and mining engineers in particular.[18]

Criteria such as those now used in Australia establish the assessment concepts, but do not establish the degree of importance a place must have to be considered to be of heritage significance. The criteria say a place has to be 'important' or 'demonstrate important features' or has to have 'special associations', but these phrases are not quantified. This is understandable (and common to all such legislative wording), as the degree of importance, or 'threshold' for heritage value, differs with each place and historical context. The thresholds applied in practice are based on factors such as comparative evidence gained through the study of a locality or region, the knowledge of particular aspects of mining places and technology elsewhere in Australia provided by the literature or the knowledge of individuals, and broader historical contexts provided in the literature. At present, many thresholds are based on sparse documentary evidence or subjective personal knowledge, which makes the assessment of some aspects of mining places very tentative. It is important for those undertaking assessments to state clearly where they believe the necessary information on which to base assessments is lacking.

Some of the criteria are generally more relevant to the assessment of mining places than others. The most commonly applicable criteria are criterion A to D. Examples from Tasmania and Queensland are used to illustrate the criteria. Peter Bell's work in Tasmania is used because it is published, and relevant to the issues. However, the Bell study is essentially a strategy for a state-wide approach to assessment of mining sites, rather than an in-depth assessment of individual mines, and the material drawn on here appeared only as an appendix to that report.[19] The examples he uses, therefore, have received differing degrees of research and assessment, and their use here is more to illustrate the points raised than to suggest the assessments are difinitive. Any misinterpretation in the use of this material is therefore this author's and not Peter Bell's.

Criterion A, sometimes summarised as historical significance, relates to the significant contribution of a place to the pattern of the history of a region, or the nation, and applies to many mining places, as mining has been a significant influence on Australian settlement patterns, economies, industrial development and population growth. In Tasmania, Peter Bell used the example of the Tasman Peninsula coal mines, the state's first mines, and Mt Bischoff, which triggered the great era of west coast mining in 1871, and in Queensland examples would be the Peak Downs Copper Mine, the first major mine in tropical Australia, and Mount Morgan, which underpinned state development for many decades.[20]

Criterion A is most often applied to successful mines, which in some way shaped the history of the state or nation, or changed, say, production technology generally and made other mines more successful (also relevant to Criterion F). However, it can equally apply to unsuccessful mines, where they have had a major historical impact. An example is the Canoona gold field near Rockhampton in Queensland, where the state's first gold rush occurred in 1857. The rush, initially heralded as the saviour of the newly-separated colony, was soon seen as a disaster, due to the relatively poor gold returns and the logistical problem facing the government of 'saving' thousands of stranded diggers. The rush's influence on the pattern of history was to change the government's attitude to the control of goldfields in the future, and perhaps as importantly, the rush provided a 'seeding' population which assisted in the development of the tropical north.[21] Ironically, the ability of the Canoona field to reflect or symbolize this historical role is greatly diminished because of the limited nature of the mining remains that survive.

Criterion B, rarity, relates to aspects of mining which are rare, uncommon, or endangered. The wording of the sub-criterion gives some guidance in applying this criterion, relating it to the ability of the place to demonstrate a distinctive way of life, custom, land-use, function or design no longer practiced, in danger of being lost, or of exceptional interest. Mining places can be rare because they have attributes that were never common, or because, though once common, they have since been greatly reduced in number. Tasmanian examples include the only surviving iron smelter in the state, at Ilfracombe, near Beaconsfield. Nineteenth-century ironworks (not strictly mining places, but closely associated) were few in number anywhere in Australia, and all such remains can be regarded as rare.[22] The other example Bell uses is the Dorset tin dredge near Gladstone, representing a once common technology of which very few examples survive.[23]

In Queensland an example of a place that satisfies criterion B is the Jibbenbar State Arsenic Mine, near Stanthorpe, which is an unusual example of government undertaking mining in its own right (in this case to provide cheaper poison to deal with prickly pear infestation), and an example of a rare industry, the mining and processing of arsenic. Another example is the Rubyvale Puddler, at Rubyvale in central western Queensland, a 1920s mechanical puddling machine used to process gravel to extract gem stones (see Fig. 1). Puddlers were once the primary processing plants on the gem fields, but now they are very rare, having been replaced by more efficient and portable technology.[24]

Problems in attributing rarity to mining places sometimes arise because the place has been assessed in the absence of comparative information— that is, the place is only 'rare' until the next example or next ten examples are identified. The attribution of rarity must be based on a reasonable understanding of the population of the type of place or particular aspect of significance. If such an understanding

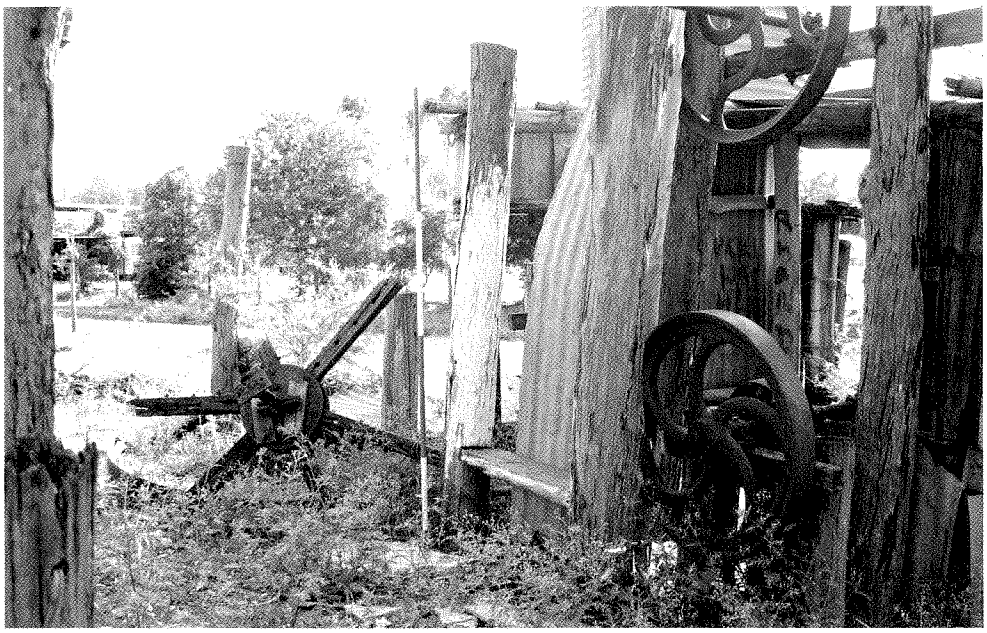

Fig. 1: Gem puddler at Rubyvale, central-western Queensland. The arms of the puddler which raked the gravels containing the gems is to the left of the 2 metre scale, the drive shafts are in the right foreground, and the engine shed and water tank to the right and behind. The place is now a rare aspect of the gemfields (Criterion B).

cannot be gained because of insufficient documentation of the type, then the assessor should highlight the need to carry out such assessment, assess the place explicitly in the context of currently inadequate information, and recommend the re-assessment of the place when further research allows it to be put into the appropriate context.

Criterion C, research value, is sometimes poorly understood. The value lies in the ability of the place itself to provide new information, not in the opportunity to learn more about the place from library research, nor in the place's ability to be used as an example of something, or to be used as an educational opportunity. Some would include sites which have already contributed their information, and indeed the Australian Heritage Commission's own guidelines allow this interpretation.[25] This author would use the criterion only where the place has the potential to provide new, as yet untapped information. Places which no longer have research potential should, instead, be assessed under other criteria. The educational use and interpretative qualities of the place is also referred to in the AHC guidelines. These values (other than in the sense of the place having great ability to demonstrate a particular aspect of significance) are not, in my view, criteria for assessment, but are very much attributes which might determine the nature of management of a place.

The important qualifying test in assessing places under Criterion C is the degree of confidence that can be placed in the claim that the place has research potential. This is particularly important at sites which are being assessed for their archaeological potential, especially in relation to sub-surface deposits. Bickford and Sullivan[26] have posed three simple questions which might help assessors make this judgement:

(i) Can the site contribute knowledge which no other resource can? ;

(ii) Can the site contribute knowledge no other site can?; and

(iii) Is the knowledge relevant to general questions about human history or other substantive problems relating to Australian history, or does it contribute to other major research questions?

In essence, can the assessor demonstrate that the information that might be obtained from the place is likely to be of research value, and can that information be obtained only from that place, and no other place or source.

In Tasmania, Bell used as an example of this criterion a settlement site at Garibaldi, which has the potential to provide information about Chinese tin mining and miners in the nineteenth century.[27] This site is likely to be able to satisfy all three questions posed above. In Queensland the Peak Downs copper smelter site, the earliest in Queensland (1865), has the potential to provide information on the genesis and early, apparently rapid, evolution of smelting practice in remote Australia, an aspect of mining history poorly recorded in the documentary evidence, and for which no other sites with the same antiquity and early length of operation exist in the state.[28] Similarly, the smelter sites at the Great Australia Mine at Cloncurry, which includes the substantial remains of an 1884 waterjacket copper smelter furnace (see Fig. 2), possibly the earliest to operate in Australia, and later reverberatory smelters which operated in tandem with waterjacket smelters, has the potential to provide archaeological and metallurgical evidence which could add substantially to our knowledge of nineteenth century copper technology in Australia.[29] It is an unusual site in terms of its combination and antiquity of particular technologies, and the literature is silent on many of the issues of interest.

Criterion D, the ability of the place to be a good example of its class, is very often used in the case of mining places with relatively little substantiation of the degree to which the place should be considered an exemplar. **All** places are, by definition, examples of their type, so the important questions in distinguishing the point at which this attribute takes on heritage significance are:

(a) how completely does the place represent all or key characteristics by which the type or class is defined?; and

(b) how important or unusual is it as an example of that class?

As an example, nearly all gold crushing battery sites will display key characteristics of such places. To apply this criterion to a gold battery, the assessor might wish to demonstrate, by reference to comparative information for other sites, that a particular place demonstrates a larger number of distinguishing features of the class than is common, or that the physical evidence demonstrating a range of characteristics is particularly intact and well preserved, compared with others of the class, or that the place has a large number of class characteristics but also possesses a wider range of physical remains representing changes in battery technology over time

Fig. 2: The 1884 waterjacket copper smelter furnace at the Great Australia Mine at Cloncurry, Queensland. This is thought to be the earliest waterjacket smelter to operate in Australia, and subsequently operated in conjunction with reverberatory smelters. The remains and the adjacent slag tip have research potential for expanding knowledge of the development of copper smelting technology in Australia (Criterion C). Further research may also strengthen the proposition that the smelters were an important technological innovation (Criterion F).

Fig. 3: One of a number of horse whims at the Miclere goldfield near Clermont in central Queensland, used to raise ore from the relatively shallow shafts. A number of whims survive here in varying degrees of decay, most having fallen over like this example. Whims were once very common winding plants on many mining fields, and characterise the semi-arid goldfields such as that at Miclere (Criterion D). They are now very rare, and the presence of a number of examples at Miclere is particularly so (Criterion C).

than other batteries (which might also qualify it under Criterion A). Some places might satisfy this criterion because they represent important regional variations in a class of place, or represent an important point in the history of the development of the class of place. Clearly, these assessments have to be based on a knowledge of the extent and nature of the class, so that comparative statements can be substantiated.

In Tasmania, Peter Bell used as examples of this criterion the Cradle Creek diggings (in the Tobacco and Cradle Creek section of the Lisle-Denison Goldfield[30]), which possessed well preserved examples of alluvial diggings, and Pioneer Mine (Ringarooma Valley), which is a good example of an environment created by hydraulic mining.[31] In Queensland, the Miclere battery and mining field, near Clermont in central Queensland, is another example of the use of this criterion (see Fig. 3). Miclere has a battery site which is largely intact and in a good state of preservation, and which characterises the various aspects of public battery operations on semi-arid gold fields. Surrounding the battery are mining remains, including surviving whims and whips, which are now rare (Criterion B), but which were key characteristics of mining in semi-arid environments in the nineteenth and early twentieth centuries. The very rarity of places with these key characteristics makes Miclere significant as an example of its class. Another Queensland example is the United Rise gold battery, near Monto, which was established in 1890s and last operated in the 1930s (see Fig. 4). The site contains a stamper battery, several boilers including an *in-situ* Cornish boiler, a portable engine, Wheeler grinding pans, a small cyanide plant, and tailing dump, and the layout of the remains is easily related to an 1890s photograph of the site. Small battery sites with so many elements are unusual in Queensland, and the site well represents the range of features typical of its class.[32]

Criterion E, the aesthetic qualities of the place, is usually difficult to apply to the majority of mining places. Aesthetic value is poorly elaborated generally in the conservation field, and has been seldom used in relation to mining sites, except, for example, in cases where associated buildings have high architectural merit. Questions posed by Jim Kerr in relation to assessing aesthetic significance are relevant to the assessment of this value in relation to mining places:

(a) has the place a considerable degree of unity in its scale, form and materials?

Fig. 4: The United Rise Battery at Monal, near Monto in southern Queensland, retains its stamper battery (to the left), several boilers including a Cornish boiler in its original bed, a portable engine, a small cyanide works, and Wheeler grinding pans (to the right). It has many of the characteristics typical of small-scale gold batteries of the late nineteenth century, to a degree relatively unusual in the state (Criterion D).

(b) does the place have a relationship between its parts and the setting which reinforces the quality of both?[33]

Peter Bell has used the engine house of the Tasmania Mine at Beaconsfield as an example of the use of the criterion, on the basis that it is among the finest architecture of the mining industry in Australia.[34] In the Queensland mining survey, the criterion was not found to apply to any surveyed place. One mining field, Mount Britton, inland from Mackay, is located in a stunningly beautiful landscape, but the beauty of the setting is not an outcome of the mining, and is not related to mining other than by accidental association. In Kerr's terms, neither the landscape nor the mines contribute significantly to the qualities of the other. The manager of the place would take the aesthetics of the landscape into account when managing the wider area that includes it, but it does not form part of the assessment of cultural significance of the mining place itself.[35]

Criterion F, technical or creative achievement, applies only where the place has evidence of specific innovation or technical creativity or achievement particular to that place (ie the place had a seminal impact), or has a particularly good (and perhaps rare) example of an innovation or innovative application of existing technology which is also represented, but in a less important example, at another place. It does not apply in cases where the place is simply part of a general change in technology demonstrated at numerous other sites (such as the use of reverberatory furnaces in the 1870s), or where the physical evidence of the innovation is poor or destroyed. An example of the latter is Mount Chalmers (Great Fitzroy) copper mine, near Rockhampton in Queensland, where flotation separation experiments for copper concentrates were undertaken at a time when Australia was leading the world in this technology. Unfortunately in this example, there is no remaining physical evidence associated with this innovation or the mine where it occurred (due to later open-cutting), so it is not an element of the assessment of the fragmentary surviving remains.[36] At the Great Australia Mine in Cloncurry, the early use of waterjacket smelters requires more comparative research before the nature of the innovation and technical achievement can be demonstrated, but a prima facie case exists for the use of this criterion at the site.[37]

In Tasmania, examples used have been the Mount Lyell smelters, which were the scene of Australia's first successful experiment in pyritic copper smelting (using components of the ore itself to fuel the smelting process) in 1902, and the Mount Cameron water race, which is a remarkable achievement of hydraulic engineering.[38]

Criterion G, strong or special social, cultural or religious association with a particular community or social group, is a difficult criterion to apply in the absence of specific evidence that such an association exists. It is likely to be applied to only a small percentage of mining places. Too often a claim of significance is made under this criterion with no supporting evidence. If asked, representatives of a local community are likely to say that they think a mining place is important, but the demonstration of 'strong and special' association goes beyond this level of normal feelings of regard for the past. The assessor has to demonstrate the existence of a high degree of regard for the place over a sustained period of time, and the feeling of high regard has to be currently held by the community, otherwise it is an historical value only and should be assessed under other criteria.

Peter Bell has used the example of the Zeehan School of Mines and Metallurgy in Tasmania, which was for many years the focus of educational and scientific training for Tasmania's mining industry.[39] The community in this example may be the local Zeehan community, and a substantial social group with a special association might be the mining industry community state-wide. In the Queensland survey, there were a number of places, such as Mount Morgan, Mount Perry, Mount Britton and Cracow mines, which gave rise to adjacent townships. It was believed that there may exist a strong feeling of regard for the mines within the communities of those townships (or among the descendants of former occupants of now-deserted townships), but there was no quantitative or substantial qualitative evidence to support this conjecture. There are ways of addressing this aspect of significance[40] which involve the community itself in the assessment process. In the absence of other clear evidence to support the claim that the community has a strong and special association with a place, it might be necessary to undertake such a consultative process to demonstrate the existence of this value.

Criterion H, special association with individuals, groups or organisations, is rarely used effectively in mining site assessments, as in few cases can 'special' associations between the mine and individuals or groups be demonstrated — every mine has associations with a mining company or manager, and a local mining community, but most are not 'special' associations. The assessment under this criterion should argue why the association between a person or group and the place is

more significant that any other association the person or group may have had with any other place. Places which either retain direct evidence of the association, or where it can be demonstrated that a person's association with the place has affected other notable aspects of the person's life's work, would generally be seen as being more significant under this criterion than places where such evidence did not exist. Other than in exceptional cases, transitory association with notable individuals does not confer significance on a place.[41]

Sometimes it is tempting to make too much of an interesting association, failing to recognise that, even though an association with a famous person may make for an interesting story in a public interpretation display, heritage assessment must be based on rigorous analysis of the evidence. Peter Bell and others have raised this in relation to the Sons of Gwalia Mine in Western Australia, where Herbert Hoover, later to be President of the United States of America, was mine manager. It was pointed out that 'it would be a mistake to attribute too much personal credit to a 23-year-old engineer backed by a highly competent mining enterprise, remembering also that Hoover was resident at the mine only from May to November 1898.'[42]

Peter Bell has used as an example of this criterion in Tasmania a mine manager's residence which was the home of distinguished metallurgist Robert Carl Sticht, general manager of Mount Lyell from 1897 to 1922.[43] In Queensland an example is the Galawa Mine near Rockhampton, which was operated by Frederick Morgan, and helped establish the Morgan brothers in Queensland mining prior to their involvement with the opening up of the Mount Morgan deposits.[44] A number of other mining sites subsequently had a special association with the Mount Morgan Company, which held a special place in the history of the state.

ASSESSMENT OF PLACE AND THE BIGGER PICTURE

It is very easy, when researching and assessing mining places, to forget the broader context in which mining occurred, and that other places, including whole landscapes, might in themselves be of heritage significance because of mining. Mining sites very often gave rise to settlement sites, some of which went on to become towns while others were abandoned when mining ceased. There were associated transport routes and infrastructure, support industries such as timber milling, brick making and light and heavy engineering, and agricultural development such as market gardens to support the mine population. Native timber species were often extensively felled, and exotic plant species introduced, and other aspects of the landscape modified directly or indirectly by mining and related activities. If we just study, record and protect the mining sites themselves, we may end up with a very narrow representation of the heritage of mining in Australia.

This issue has been discussed at length in the USA,[45] and in Australia some attention has been shown to mining landscape,[46] but on the whole mining places have been assessed in isolation, apart from their landscapes and associated places. This has not necessarily been because of any short-sightedness on the researcher's part, but has more often been a result of the narrow focus of the funding agency's brief, which is often prepared in response to resource pressures or specific land-management demands. It is important, even where the brief is focussed narrowly on a mining production site, for the archaeologist to identify the wider context of the site, and draw to the attention of the manager or funding agency the need to study and assess associated places and landscapes resulting from mining.

NOTES

1 Australia ICOMOS 1992:21.

2 For a fuller discussion of this issue, see Tainter and Lucas, 1983.

3 For example this definition, or one quite similar, is included in the Australian Heritage Commmission Act 1975, Queensland Heritage Act 1992, Heritage Act 1977 (NSW), Land (Planning and Environment) Act 1991 (ACT), South Australian Heritage Act 1978, Heritage of Western Australia Act 1990, Heritage Conservation Act 1991 (Northern Territory), and the Australia ICOMOS Burra Charter.

4 Kerr 1985; Australia ICOMOS 1992; Pearson and Sullivan 1995.

5 State Heritage Branch 1985.

6 Bairstow and Davies 1987:47.

7 Bell 1989.

8 McCarthy 1990.

9 Bannear and Annear 1990:31; and re-phrased in Bannear 1993:32–33.

10 Coroneos 1993.

11 Allom Lovell Marquis-Kyle Architects and Austral Archaeology 1993.

12 Ritchie 1991.

13 Ritchie 1991:41.

14 Bell 1993.

15 Pearson 1994a.

16 Australian Heritage Commission 1990.

17 see James 1993.

18 see as an example Noble 1990; Spude 1990; Hardesty 1990a and 1990b.

19 Bell 1993: Appendix C.

20 Bell 1993:59; Pearson 1994a:14, 17.

21 Pearson 1994a:11, vol 2, 20.

22 See Jack and Cremin, 1994.

23 Bell 1993:60.

24 Pearson 1994a:vol 2.

25 Australian Heritage Commission 1990:15.

26 Bickford and Sullivan 1984:23–24.

27 Bell 1993:60.

28 Pearson 1994a:vol 2.

29 Pearson 1994b:16.

30 Coroneos 1993:70.

31 Bell 1993:61.

32 Pearson 1994a:vols 1 and 2.

33 Kerr 1985:10.

34 Bell 1993:61.

35 Pearson 1994a:vol 2.

36 Pearson 1994a:vol 2.

37 Pearson 1994b.

38 Bell 1993:61.

39 Bell 1993:62.

40 see Blair 1993.

41 see Kerr 1985:10–11 for a discussion.

42 State Heritage Branch 1985:21.

43 Bell 1993:62.

44 Pearson 1994a:vol 2.

45 Feierabend 1990; Hardesty 1990a and 1990b.

46 See McGowan 1992; Lamb 1989.

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