

# THE ROLE OF GOVERNMENT IN THE CONSERVATION OF ENGINEERING HERITAGE

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SUMMARY Current New South Wales legislation can be used to protect some types of engineering heritage items, but the nature of the items and lack of recognition of their engineering heritage value makes the task difficult. Nevertheless, the Heritage Council of New South Wales has acted to conserve a number of items of the engineering heritage and some examples are described.

## 1 INTRODUCTION

Within Australia there is growing public interest in conservation of heritage items, especially picturesque examples of our architectural heritage, or quaint domestic relics. The various governments in Australia have responded with heritage conservation legislation of varying effectiveness. Unfortunately, the public at large and most of the engineering profession, has little awareness that we have an engineering heritage and even less interest in its conservation. Consequently, government action in this field has been almost incidental.

In this paper I discuss the interpretation of heritage legislation in New South Wales relative to engineering heritage and the ways in which it can or cannot be used to protect various types of engineering heritage.

## 2 RECOGNISING THE ENGINEERING HERITAGE

Dr Bruce Davis in his Civil College Technical Report of February 1984, "The Role of Professional Engineers in Heritage Conservation" states:

"The engineering heritage is of value in demonstrating changing use of materials, functional design, methods of construction and technological advancement"

but he does not define the engineering heritage.

So what is engineering heritage? The Heritage Act, 1977, of New South Wales, enacted "to conserve the environmental heritage of the State", interprets environmental heritage as meaning:

"those buildings, works, relics or places of historic scientific, cultural, social, archaeological, architectural, natural or aesthetic significance for the State."

If the words engineering, or even technological, appeared in this list, a definition could then simply be (in New South Wales), that something is an item of the engineering heritage because the Heritage Council of New South Wales says it is. Omission of the words is significant of the lack of recognition of engineering heritage outside, and often inside, the profession of engineering.

Heritage is defined in the Oxford Dictionary as "what is or may be inherited". Items of the engineering heritage could then be those significant things of an engineering nature which have been handed on by our predecessors (not necessarily engineers). Such items may be large and dramatic physical works such as bridges. Equally they may be small and easily overlooked works such as a heart pacemaker. There is no definition of a "work" in the New South Wales Heritage Act and this allows great freedom in the interpretation of the word. Items of engineering heritage may also be representations of or information about works, information about engineers or about the development of engineering as a profession and as a body of knowledge.

An engineering work need not be the first or biggest or finest of its kind to be worthy of recording and/or conservation. These constraints have not been applied to the classification of houses for instance. An item should however, be representative of the evolution of its type, common or rare, Australian made or of overseas origin, and will have been used in some engineering task, spectacular or humble. Engineering information of heritage value may range from original records such as drawings and photographs, to journals or recollections of those involved.

Some time ago the Heritage Committee of Sydney Division I.E.Aust. provided a list of engineering items classified "A" to the Heritage Council of New South Wales. This interesting list ranges from working drawings and a photographic collection through a wool press and a clock, to the Sydney Harbour Bridge.

### 3 PORTABLE ITEMS OF THE ENGINEERING HERITAGE

Although all these A classified items have been assessed as "extremely valuable items of engineering heritage", only those ones which are effectively non-portable can be protected using existing legislation in New South Wales or, I understand, in any other State or Territory.

In the New South Wales Heritage Act "works" or "relics" are protected by defining their site. There is no clause to prevent their removal from that site unless, if they are relics, they both predate 1900 and are buried (in which case an excavation permit is needed before they can be disturbed). Documentation, and any object which could be rolled away or unfixated and lifted away from a site, or which postdates 1900, is not covered by the provisions of the Act.

The Industrial Archaeology Committee of the National Trust of Australia (NSW) is doing a magnificent job in the documenting and classification of such items when these are brought to

their attention. It should be remembered though, that this classification has no legislative force.

It is necessary for the Institution of Engineers, Australia, as well as the National Trust, to work towards getting official recognition and legislative protection of such portable items made available. Until this happens, we must make do with persuasion, as by giving active support to such groups as the National Trust/Government Authority coordinating committees (eg. the DMR & State Rail), or in personal or Institution representations. Many members of the Institution are in a position to decide, or to influence decisions, on whether and how to save valuable items of engineering heritage. There are too many examples of documents destroyed or machinery broken up because no-one at the time understood or gave a thought to their heritage value.

#### 4 NON-PORTABLE ITEMS OF THE ENGINEERING HERITAGE

Protection of non-portable items of the engineering heritage is feasible using existing New South Wales state legislation. In practice, many difficulties arise which tend to apply peculiarly to engineering heritage. For instance;

- (a) The engineering heritage significance of items is rarely recognised. With a building, this may be because the importance of the engineer's contribution to the design and construction is not understood. A machine of great significance in its time may seem to the layman and often, unfortunately, to the engineer designing its replacement, a heap of old junk.
- (b) The upkeep of engineering heritage items, or their protection, can be expensive. Usually it is assumed that conservation will be more expensive than alternatives. Sometimes this assumption is correct, sometimes not so, however the conservation option is seldom explored.
- (c) Non-portable items of engineering significance tend to be large. They get in the way of development and little thought is given to their conversion or re-use.
- (d) They often lack aesthetic appeal. Contrast the fund raising potential of restoring a pioneer sewage treatment plant with that of restoring Elizabeth Bay House.
- (e) They often belong to the Government. This last difficulty has several facets and complications, as:
  - (i) Commonwealth property is not subject to State control. This applies to such things as military works (Cockatoo Dock, or the fortifications on the North Head of Sydney Harbour) or to Telecom (early telephone exchanges) or to government stores or factories (Lithgow Small Arms).

(ii) With State property, policy and interdepartmental etiquette both work to prevent the placing of conservation orders. There is a hesitancy to impinge on the prerogatives of other branches of government.

(iii) The charters of Government Authorities do not permit them to use public money to maintain property which is not in active use. When an old bridge is bypassed, if not maintained, it must be destroyed, lest with lack of maintenance it becomes dangerous.

## 5 CONSERVING THE ENGINEERING HERITAGE IN NEW SOUTH WALES

Despite the real or perceived obstacles discussed above, the Heritage Council of New South Wales has been able to act to conserve some items of engineering heritage. The Heritage Council, consisting of 11 members, is constituted under the Heritage Act to give advice and make recommendations, on matters affecting heritage conservation and on implementation of the Act, to the New South Wales Minister for Planning and Environment. There are no engineer members at present and there is no provision for a representative of the engineering profession, even though the R.A.I.A. and the R.A.P.I. are specifically included in the membership.

The Heritage Council is supported by a professional and administrative staff established within the Heritage and Conservation Branch of the Department of Environment and Planning. The Branch provides technical assistance to the Heritage Council, local councils, other public authorities and members of the public.

Conservation provisions of the Act include conservation instruments (orders), which may be interim or permanent in nature and may be used to control demolition, damage or despoliation, excavation, development, alteration etc., of buildings, works, relics and places. Financial grants, loans and guarantees may be made available on the recommendation of the Heritage Council to the Minister. There are provisions for rating and land tax relief on land subject to a permanent conservation order and the Minister has power under the Act to acquire property and to accept gifts or bequests of any property, although acquisition is rare.

Some other functions of the Heritage Council are to carry out investigations, research and inquiries and to arrange and co-ordinate consultations and discussions with respect to the conservation of items of the environmental heritage.

One, or several of these functions have been used in each of the following examples, selected because they all represent some part of the engineering heritage. This list gives the name, type and location of each item only. A more detailed description of the items and of the action taken in each case will be provided at the conference.

- \* The Great North Road.  
A portion of the convict built road between Wiseman's Ferry and Ten Mile Hollow.
- \* Tathra Wharf and Buildings.  
Built for the coastal trade along the south coast of New South Wales at Tathra.
- \* Maldon Bridge.  
Suspension road bridge crossing the Nepean River near Picton.
- \* Prince Alfred Bridge.  
Wrought iron truss bridge and timber trestle road viaduct crossing the Murrumbidgee River and its flood plain at Gundagai.
- \* Mark Foys.  
Concrete department store building in Sydney.
- \* Ottery Arsenic Mine.  
Disused tin and arsenic mine near Emmaville in northern New South Wales.
- \* Horseshoe Bridge, Lapstone.  
Curved stone bridge, designed by David Lennox and built in the foothills of the Blue Mountains near Penrith.
- \* Adelong Falls.  
Remains of gold mining and processing works at Adelong near Gundagai.
- \* Horizontal Windmill.  
Remains of a rare type of windmill on a pastoral property in the Riverina.
- \* Junction Reef Dam.  
Dam and associated works in a gold mining area on the Belubula River near Mandurama in the central west of New South Wales.
- \* Walsh Bay Piers 8 & 9.  
Pier buildings and hydraulic equipment associated with wool handling and shipping, in Sydney.
- \* de Burgh's Bridge.  
Disused composite timber/steel truss road bridge across Lane Cove River in Sydney.

## 6 CONCLUSION

The number of items of primarily engineering interest considered would constitute less than 1% of all the items coming before the Heritage Council. Obviously, education of engineers and the public is needed, as well as good

publicity, to enhance recognition of our engineering heritage. Until a clear public preference or demand for the conservation of such engineering heritage items is evident, the obstacles put in the way of their protection will continue to appear insuperable, even if they are not, and the role of government in the conservation of engineering heritage will remain limited.

In the meantime, it is up to engineers in all fields to take responsibility for recognising engineering heritage at risk. They should take such action as is within their own power to protect it, and they should notify or lobby those who might be able to do something to promote its conservation.