Heritage Inquiry
Productivity Commission
PO Box 80
Belconnen ACT 2616

Attention Ms Jill Irvine

Submission from Engineering Heritage Australia

I am writing to make a brief submission on behalf of Engineering Heritage Australia (EHA), a special interest group of Engineers Australia (formerly known as the Institution of Engineers Australia). EHA has groups in each State and Territory of Australia, with NSW groups in both Sydney and Newcastle. You have already received submissions from our Sydney and Tasmanian groups (submissions 14 and 29 on your website), and I endorse the issues they raise. They provide an insight into the concerns of engineers in those states and the valuable voluntary work being done to highlight significant engineering heritage and assist in its conservation. EHA's activities and experiences are common across Australia to a greater or lesser extent, and as a National Board EHA provides a degree of coordination and sharing of limited resources.

About EHA and engineering heritage

EHA is concerned with historic heritage places which have an engineering or industrial content. We follow the principles of the Burra Charter and Commonwealth criteria of heritage significance or criteria in the State or Territory concerned, so that a place that is assessed for recognition under our plaquing program can also be nominated to the appropriate register with the owner's agreement.

While we are also concerned with plant and machinery, this is normally regarded as movable heritage and outside the scope of this inquiry, or else it is assessed as an integral part of the place where it is located. However we aim to provide a bridge to machinery conservation groups such as tram and rail preservation societies and aircraft museums and the like where a different approach to conservation may be adopted.

With regard to historic heritage places our approach closely parallels other mainstream conservation organisations and we actively cooperate with and support State and Commonwealth heritage organisations, the National Trusts and Australia ICOMOS. However we differ in emphasis in our focus on engineering history and heritage and industrial processes, and the skills we apply to them. We may identify and judge to be significant, certain aspects of a place which were innovative from an engineering design consideration, but may be overlooked or misunderstood by an architect or archaeologist without the necessary experience and skills. This can be particularly the case with redundant industrial and production facilities such as power houses, where a conservation study may concentrate on the building elements without sufficient understanding of the function and interconnectedness of plant items which remain, or for which evidence remains.

Heritage engineers may be engaged in the conservation of items with specific engineering or industrial significance, or alternatively called on to provide advice on assessing, strengthening or reconstructing aspects of places of architectural or historic significance where specialist skills and accreditation are required. While such advice is often structural in nature, it may also involve engineering services such as hydraulics or electrical and mechanical plant. Understanding how things were designed and operated can be critical to their conservation and interpretation.

Comments on specific terms of reference

1. Pressures on conservation of places

With regard to the first term of reference of the inquiry, we see pressure on conservation of historic heritage places from

- Engineering structures such as bridges being challenged by increasing demands such as wheel loads and traffic volumes and safety requirements, with owners being more interested in their replacement as a simple clean lower maintenance solution. Sometimes the problems and costs associated with conservation can be exaggerated to avoid having to fully investigate conservation options.
- Industrial buildings being lost through lack of a suitable opportunities for reuse
- Lack of ongoing use resulting in cessation of maintenance and subsequent rapid deterioration
- Industrial processes in heritage buildings being sacrificed through adaptive reuse of the spaces in the building without sufficient value being placed on conserving and interpreting significant aspects of their former use.

There are good and bad examples of conservation and attempted protection of places with engineering and industrial heritage significance. Two such papers delivered at our National Engineering Heritage Conferences, which address the issues of obsolete industrial complexes were presented by Julia Lamborn[1] and Ian Baxter[2].

One factor which will assist in the resolution of the issues raised is the participation of a suitably qualified and experienced engineer in the heritage conservation team. Another is sufficient budget being available to engage the appropriate advice and carry out the appropriate conservation work.

2. Benefits and costs of conservation

The benefit of conservation of historic heritage places are many. Some of these benefits will be common to other types of built heritage, while some are specific to our field. In the engineering heritage context I have previously identified[3]

- Continued original use or purpose, such as with Sydney Harbour Bridge
- Economic reuse, such as Eveleigh Railway Workshops

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[1] Lamborn, J *The Dilemma of Reuse of Obsolescent Industrial Complexes,* Transactions of Multidisciplinary Engineering, Vol GE23, 1999, The Institution of Engineers Australia, Barton ACT

[2] Baxter, I *Redundant Industrial Heritage: the challenges and the solutions!* Transactions of Multidisciplinary Engineering, Vol GE26, 2002, The Institution of Engineers Australia, Barton ACT

[3] Baker, K *Why engineering heritage matters,* Australian Journal of Multidisciplinary Engineering, Vol 3, No 1, 2004, Engineering Media, Crows Nest, NSW

- As a tourist attraction, such as the Great Wall of China or the Eiffel Tower
- Assisting public understanding of technology, such as town water pumping stations
- Having fun with machinery (with hard work), such as railway historical societies
- Training engineers and technologists, such as steam section of Powerhouse Museum
- Avoiding reinventing the wheel, such as using Stirling engines with solar concentrators
- Helping to understand who we are, such as Wallangarra railway station (change of gauge representing separate development of states)
- Providing evidence of use and benefit, eg Goldfields water supply scheme, and
- Suggesting appropriate technology elsewhere, such as simple micro hydro power technology in developing countries.

Sometimes the benefits of conservation can be clearly identified in economic terms, and conservation then proceeds as a commercial venture or a revenue returning government investment. More often the conservation needs massive voluntary effort with enough cash input to keep the project alive, or recognition by government that there is a need that will not be otherwise met, and public funding is justified. Former Federal Heritage Minister Kemp put the view to the National Cultural Heritage Forum that there was a need for heritage organisations to look to commercial sponsorship or partnerships rather than expect increased government funding. While sponsors and business partners may be attracted to running a tourist venture once it has been conserved, there are many situations where sponsorship will not be forthcoming for industrial projects involving significant investment and risk. Where public good is involved there should be a role for government.

3. Relative roles and contributions

There is clearly a need to assist owners with funding where the significance of a place justifies retention, and they will be required to invest in additional conservation costs beyond what can be justified on simple economic grounds. The Commonwealth now seems to accept greater responsibility for conservation of places of national significance, although the number of historic places recognised is still very small. Consideration needs to be given to funding sources being available from the three tiers of government depending on the level of significance of the places in question, and an equitable provision of grants or cost sharing with states and local government to enable them to meet their heritage obligations.

4. Regulatory and other incentives and impediments

Since members of EHA are not for the most part owners of historic heritage places, regulation rarely impacts on our voluntary work of advocacy and identification and recognition of heritage. However there are increasing conservation costs being encountered in places we wish to see conserved through stricter environmental and workplace health and safety requirements, such as precautions when removing asbestos or lead based paints. While these safety regulations are no doubt justified, increased costs are an impediment to conservation, and increased insurance premiums can be an impediment to voluntary labour contributions.

5. New approaches
Greater use can be made of new technology in publicising and interpreting heritage places, thereby creating greater user-pays opportunities through tourism. There may also be a case for use of modern materials that are more durable in repairs and reconstruction work, however this needs to be balanced against the significance of the original fabric and the authenticity of the work.

6. Policy and programme approaches and competing objectives
Without attempting to address major policy issues, an area of concern in recent years is the tendency for government grants to be directed to physical conservation work to the exclusion of funding heritage studies and preparation of management plans. Without the preparatory intellectual work, there is a danger of doing inappropriate physical work and creating damage or wasting resources.

The availability of appropriately skilled people in the industry is also a concern that needs to be addressed at the policy level. Universities starved of funding for conservation courses, the lack of specific training in Australia for engineers to develop heritage skills, and the loss of traditional trade skills are areas of major concern to EHA.

We would welcome the opportunity to discuss these matters further at one or more of your hearings.

Keith Baker
Chair
Engineering Heritage Australia
29 July 2005