

Seminar on Industrial Heritage

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Industrial Heritage – overlooked and unappreciated - the poor relation?

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1. Recognising industrial heritage

The line between engineering and industrial heritage is quite blurred and so it is hardly worth spending time trying to draw the distinction and arguing about what goes into each category. I guess we all know or have a good idea of what engineering and industrial heritage is – by and large it relates to the infrastructure, the manufacturing and the resource development that makes our society work.

The monumental things like bridges, dams, steelworks, powerstations etc. are easy to recognise and to think of as possibly having heritage value. But what of the commonplace, utilitarian items – the things we use and rely on everyday that we tend to take for granted? Can things like roads, railway tracks, water pipes, sewage treatment works, brickworks, manufacturing plants, cars, cake mixers, telephone exchanges, computers – can they have heritage value? Of course they can!

However, the conundrum is that they are utilitarian and must be kept up-to-date if they are to remain useful – they must be modified, patched, repaired, upgraded, replaced, even demolished or junked when they can't efficiently perform their desired function; otherwise they become useless, uneconomic, or uncompetitive.

In some cases plant may be moved to another site and re-used - as it should be. We might think of things like cableway towers, sugar milling machinery and all sorts of manufacturing machines no longer useful in their original location, but of use in another place. However, relocation means their context changes - sometimes many times - such that they no longer relate to their original site.

The problem is how do you, indeed can you, or in fact should you, assign heritage value to such plant and conserve it for posterity. You can't keep everything, museums can't accommodate all the possible items and at any rate they would be out of context there. (In some ways, museums are a refuge for

orphans that have lost their home). And conserving items that can't be adapted to another purpose is not only an expensive and often unaffordable answer, but is a poor option.

It would be nice if we could preserve everything we value, but if this proves unsustainable for a variety of reasons, such as lack of both financial and human resources – if a realistic business or life-support plan cannot be produced – then destruction may be inevitable. But before that happens, the items should be 'conserved' by good documentation – photography, measured drawings, written and oral history and so on.

There was an opportunity to do great and imaginative things with the Eveleigh Railway Workshops that were constructed for the building and repair of steam locos, and became redundant when steam was replaced by diesel and electric. For example, there was an option of creating a working museum that could have helped preserve dwindling trade skills, that would have contributed to the conservation of heritage objects, particularly where the skills and equipment are otherwise unavailable, and it could even have produced income; but this option was either overlooked or discounted. Consequently, most of the heritage value of this great, historic, rare and important place has been destroyed. Fortunately Lucy Taksa has done a wonderful job of conserving its history and some of its heritage through a collection of oral history, official records, staff records, photographs and so on, and then constructing an amazing CD that works just like a website.

2. Evaluating industrial heritage

I don't have simple answers to all the questions of what you do with industrial heritage whether it be still in use, redundant or outmoded, because there is no one answer. But what we must recognise is that in everything there is potential heritage value. And so when the time comes for modification or change, we should be continually asking ourselves has it / could it have heritage value, and if the answer is 'Yes', what is that value, and can we manage the item in a way that will conserve its heritage.

There was a time when we cared little for the environment because ‘there was plenty of it’ and society’s needs were greater than the loss of some small part – say a building, a few trees, some habitat, or a landscape. Now the environment is pretty well mainstream, and we ask the environment-value questions nearly every time we want to do something. And that’s how it should be with heritage.

So really, when change is required (whether it is likely to affect industrial, engineering, architectural, moveable heritage and so on), we should employ a decision-making process that explores the options – whether to demolish, remediate, replace, modify, adapt - and we should do it rigorously - on paper for important and large items and maybe in our heads for less important ones. And having weighed up the pros and cons, the implications and the impacts, and having selected the preferred option, we should look at how we can conserve the heritage value by minimising the impact of the proposed changes - the impact of what we want to do.

3. Knowledge and expertise

In many cases an expert is needed or someone with specialist knowledge for this task. It’s just like going to your local general practitioner. He’s OK for the common ailments, but when it comes to something unusual, or complicated you expect him to seek the help of a specialist. And so it is with heritage consultants. Someone who is trained in archaeology, engineering or architecture that has developed a competence in heritage work, or who has even had specific heritage training, still can’t be expected to be competent in the myriad aspects of heritage work they may encounter. So like the GP, you expect them to know when they don’t know, and to call in an expert or specialist.

Consider this hypothetical example (but one drawn from experience) of a structure on the State Heritage Register that needs remedial work to prevent failure in a heavy storm and to support its fabric from erosion and deterioration. The owner designs the remedial works and then engages a consultant to prepare a Statement of Heritage Impact. The document prepared by the consultant:

- Names the authors but doesn’t give their relevant credentials, so we don’t know whether their work has an appropriate professional foundation; (‘heritage’ in the name of the company is no guarantee).
- Doesn’t state the problem that was being addressed.
- Provides a deficient Statement of Heritage Significance, which doesn’t indicate what really was significant about the structure.
- Doesn’t indicate what alternatives had been examined and why the proposed solution was adopted.

- Doesn’t indicate the measures employed to minimise damage to the heritage values by the proposed work.
- Doesn’t provide appropriate cross-referencing between the textual description of the proposed work and the drawings (which are poor ones at that).
- Contains inaccuracies and factual errors.
- Devotes most of the report to an interesting but largely irrelevant history of the development of that type of structure and of the local government area, as well as a regurgitation of heritage criteria. (The thought arises that this padding was provided to mask the consultant’s lack of knowledge).

Obviously the consultant didn’t have much idea of what is required in a professional report and didn’t seek help from an expert or specialist. As a consequence he produced a document that didn’t address the essential issues and was of little use for decision-making.

But although the consultant proved unequal to the task, the owner was substantially to blame because he poorly managed the whole project. He decided what he wanted to do without exploring options or considering heritage impacts, and then set about justifying his decision. He gave that job to an inappropriate consultant, provided an inadequate brief, didn’t require engagement of a specialist on items outside the consultant’s expertise (although the consultant had an ethical obligation to do this anyway), gave the consultant little guidance, and accepted the work uncritically without checking or evaluation, before submitting it for approval. Again, one could be excused for drawing the conclusion that the owner was either doing as little as he could get away with to comply with the requirements of the Heritage Office, or was contemptuous of the process.

What this means is that an owner, or a principal cannot avoid his accountability for doing a job properly by using a consultant. He has an obligation to engage an appropriate and competent consultant, to evaluate the consultant’s work and to accept responsibility for it.

In the above example some of the deficiencies in the consultant’s report could arise from the Heritage Office’s guideline on *Statements of Heritage Impact*, which is insufficiently explicit, and has been claimed by some heritage practitioners as being not easy to use. This coupled with a practitioner who is merely going through the motions, doing only what he perceives is being asked of him (without paying regard to the spirit or purpose of the task), can result in sub-standard work.

The problem is compounded if the local government council or the Heritage Office does not insist on provision of an adequate Statement (SOHI) in the first instance. If they start negotiating back and forth with the proponent and/or his consultant, the project is delayed,

time and money are wasted for all concerned and the revised report can often be a poor compromise. It is also likely that the consultant learns nothing and repeats the performance next time.

One major problem with the Guideline is that like some other documents, the writer's mind seems to have been focussed on buildings, even though the document says '*heritage items can be buildings, places, relics, or other works ...*' Accordingly, Table 1, which identifies '*Some questions to be answered ...*', asks the questions about Demolition (wholly or in part), Change of use, Additions (major and minor), New development adjacent to a heritage item, Repainting etc, etc, etc. It says nothing about Restoration, Remediation, Strengthening, Repair, Upgrading and so on. (One could be forgiven for perceiving this myopia as an instance of industrial / engineering heritage being regarded as a poor relation within the heritage 'family').

Unfortunately, some consultants either don't know when they don't know, or are so arrogant that they don't call in a specialist and accordingly, at times make bad mistakes. There was a case where a consultant did a heritage inventory for a council and missed all the engineering, because that was not his basic training. We have seen identification of railway heritage confined to the station buildings with the track, the bridges, the signals, the culverts, i.e. most of the infrastructure, totally ignored.

We have seen reports by consultants (working outside their specialty, contrary to professional ethics), who use incorrect terminology in their descriptions. Some have placed great store on features new to them that are common in the industry and are of little heritage value, while they ignore the really important aspects because they either don't perceive them, or don't understand them. This brings into question their knowledge, their competence, their understanding of the heritage significance - in fact, their whole credibility.

4. Heritage doesn't need to be old

The American Society of Civil Engineers (ASCE) won't consider anything for designation as an Historic Civil Engineering Landmark unless it is at least 50 years old. Sounds OK, but when they came to Australia in 1997 on one of their visits and wanted to put a plaque on the Snowy Mountains Scheme, we had to fudge to make it happen. We did this by going back to a 1947 report recommending construction of the Scheme, although the enabling Act was not passed until 1949!

So under its criteria the ASCE will not (at least for some time) be able to plaque the Sydney Opera House, which opened in 1973 and involved ground-breaking structural engineering technology! This is despite the fact that almost from the day it opened, virtually the whole world was convinced of the Opera House's heritage value.

In today's world heritage doesn't have to be old; we need to be searching and open-minded when considering whether something could have heritage value.

So what about much of today's electronic technology e.g., computers, electronic records or even oral history recordings? The technology is developing so rapidly that items can be out of date and discarded in a few short years, and almost daily there are breakthroughs of historic importance that should be recognised and recorded. We can't wait perhaps even five years to regard them as of heritage value, because they will be lost - '*Gone with Gowings*' by then. But really, while the machine itself may have some heritage value relating to its appearance, the materials and how it works, its real significance lies in what it does - the software. And we all know that not only changes quickly, but the machines that can operate it become obsolete and discarded in a few short years.

Museums, conservators and curators of computer technology are still occupied with the problem of how to conserve the heritage value of computers; one thing that most agree on is that there is no single solution and that they need to continually explore the options that become available. Sharing the various solutions among the museums of the world is one possibility. (See Matthew Connell's paper *Computers as Historical Artefacts* to the Engineering Heritage Conference, Sydney 2005).

The experts are still trying to find a satisfactory solution to the archiving of electronic records, and oral historians are still in a muddle about finding a long-term answer to the conservation of oral history recordings.

5. Heritage issues

In fact there are many issues that heritage practitioners are still wrestling with, whether they be related to heritage generally or to industrial and engineering heritage in particular. There are also other issues such as those that relate to sustaining in the long term, the volunteer organisations concerned with heritage conservation. Some of the issues are:

- **Keeping the knowledge**
 - maintaining trade skills
 - archiving engineering documents, particularly in the electronic age.
- **Conserving sets and classes** of heritage items - e.g., bridges, dams, railway stations, pumping stations, treatment works.
- **Conserving heritage structures that can't be adapted** to another purpose.
- **Conserving redundant heritage dams** - e.g., dams that are unsound or are full of silt.
- **Conserving timber structures** - as timber is largely an out-moded structural material and decays very quickly.

- **Sustaining heritage in large organisations** both public and private – identifying the means by which they can develop a culture of heritage appreciation and automatically practice conservation.
- **Maintaining viable volunteer organisations** – identifying the means by which they can sustain and renew themselves, and care for their volunteers.
- **Business planning** in the collection, display and conservation of heritage items – aimed at emphasising that strategies should be developed to generate finance and resources to sustain them into the future.
- **Managing redundant heritage-important defence sites** – exploring the issues involved in adapting large redundant sites to modern needs and to make them self-supporting, whilst conserving their heritage.
- **The future of railway heritage** in NSW – the largest single collection of heritage items in the State.
- **Conservation of computers** and high tech equipment.
- **Storing and conserving moveable heritage.**
- **Safety and legal issues** in heritage conservation.
- **Interpretation.**
- **Creating public awareness** of heritage values – enlisting the public as supporters, advocates and owners of their heritage legacy.
- **Disaster preparedness and emergency response** for heritage conservation – aimed at ensuring that heritage assets do not fall victim to response activities after disaster events.

We set out to explore these issues in the International Engineering Heritage Conference held in Sydney in September 2005. Of course we couldn't solve all the problems, but drawing on the experience of people with good track records, the conference generated some very good ideas on many of them, as well as some excellent and helpful papers.

These papers together with a lot of other material from the conference are available on CD at \$26 posted from Engineers Australia, Sydney.

6. Guide to industrial heritage and where to get help

About a year ago we prepared a pamphlet on Engineering & Industrial Heritage for the Heritage Office and this is available on its website.

It traverses a lot of the points made in this paper and also suggests places where expert help and advice can be obtained when dealing with issues of industrial and engineering heritage.

The Sydney Engineering Heritage Committee can be contacted in a number of ways:

- Email: sydheritage@engineersaustralia.org.au
- Website: http://sydney.ieaust.org.au/heritage/heritage_in_dex.htm
- Postal address:
 - Up to 26 May 2006:
Sydney Engineering Heritage Committee,
Engineers Australia,
PO Box 138,
Milsons Point NSW 1565
 - From 29 May 2006:
Sydney Engineering Heritage Committee,
Engineers Australia,
8 Thomas Street,
Chatswood NSW 2067

If the Sydney Engineering Heritage Committee doesn't have the requisite knowledge or resources, it will attempt to identify someone who can help.

7. Engineering heritage email forum

There is also an Australia-wide engineering heritage email forum, which is free and all interested people are invited to join; on it they can post queries and participate in discussion. Membership is free and can be arranged by contacting the Moderator, Harry Trueman at egtrueman@bigpond.com