

IPENZ Engineering Heritage Newsletter

March 2008

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1 New Engineering Heritage Board as of 1 April 2008

The recent approval by the IPENZ Governing Board for the establishment of an Engineering Heritage Board (EHB) gives greater recognition of the role that Heritage plays within the organisation. Effective as of 1 April 2008, the EHB will be responsible for the strategic direction of IPENZ heritage, specifically:

- * documenting, promoting and recognising the role and contributions that the engineering profession has played in the development of New Zealand;
- * recording and promoting the work and careers of significant engineers and
- * documenting and celebrating the history of the IPENZ.

It has been recognised that the identification and promotion of engineering heritage has the potential to make a very effective contribution to the work of IPENZ in raising the profile of the profession as well as promoting engineering and technology as a career.

The Board will have up to eight members with one nominee from:

- The New Zealand Historic Places Trust;
- each active and functioning Chapter and
- up to three nominations from the IPENZ Governing Board, of whom one may be a member of the Governing Board.

The Chair will be appointed by the IPENZ Governing Board but may not necessarily be a governing Board nomination. Each appointment will be for a term of two years and will be eligible to serve up to three terms. Initial appointees shall have staggered terms to provide continuity through future term-changes. The governing Board shall retain the right to review the composition of the EHB at any time. A Secretary will be appointed by the Chief Executive (non-voting).

This move was recommended by the current National Engineering Heritage Committee (NEHC) to enable more direct representation by the Chapters on the Board and by this means to improve communications; ensure a clear link to the IPENZ Board and to have a smaller, more focussed Board membership separate to the Chapter committees.

The NEHC will return to its role as the Wellington Engineering Heritage Chapter and focus on heritage in the Wellington region. Further progress will now be able to be made on a planned Wellington engineering heritage walk and finalising the details of the 4 plaques to commemorate the North Island Main Trunk Railway centennial celebrations.

2 Request for Donations of NZ Engineering Heritage Photographs

One of the first tasks of the Wellington Engineering Heritage Chapter is to request donations of New Zealand engineering heritage photographs.

These would be framed and displayed in the reception area and meeting rooms of the IPENZ office in Wellington. It is hoped that some before and after photographs could be obtained to show the development of New Zealand's engineering heritage.

Both the content of the photograph and the source of the donation will be acknowledged. The size of the donated photograph will not be as important as the quality but all donations will be gratefully received and considered for display or copied for safe keeping in the IPENZ archives. Donations can be sent to:

Heritage Administrator
IPENZ Engineers NZ
158 The Terrace
Wellington.

For further information, please contact Susan Weekes, Heritage Administrator, by phone (04) 473 2021 or email sweekes@ipenz.org.nz

3 Report on the Australian 14th National Engineering Heritage Conference By Rob Aspden

I was privileged to be able to attend both the conference and the pre-conference tour in Perth in November last year. Like many New Zealanders, I tend to regard Perth as one of the most remote spots on the earth, so it was a voyage of exploration for me. It also took me to the scene of the famed C Y O'Connor's triumph (and demise).

To start with the pre-conference tour took in what I imagine to be the green part of the state, as we travelled south from Perth. One of the main themes of the conference was the hardwood timber industry in Western Australia and this was the main focus of the tour. On our three and a half days of travel we covered over 1200 km (Perth to Albany, to Manjimup, to Bunbury and back to Perth) through attractive farmland, karri forests and back along the rapidly developing coast. In this time we saw samples of what remains of the big eucalypt forest (mainly karri, but also tingle gums in the Valley of the Giants where we walked on a lively and impressive treetop level walkway). We visited the decaying Donnelly River timber mill which was built by Bunnings Ltd in 1949 and operated until 1978 when it was closed for economic reasons. It remains an example of a typical forest mill powered by steam engines. Much of the equipment is still there but the rapidly decaying structure needs a great deal of work if it is to be preserved as an example of the technology of the timber industry. The surrounding village is now a popular holiday venue. It is to be hoped that this can help encourage the preservation of the mill.

Other items of engineering heritage interest seen on the tour were:

- Wake's garage in Katanning
- Katanning Newspaper printing works
- Princess Royal Fortress at Albany
- Whale World (out of Albany)
- The pier at Busselton (longest in the southern hemisphere)
- An old wharf at Bunbury currently being partly refurbished
- Dardanup Heritage Park

I would rather not say what I thought of Wake's garage (a place where two brothers had once performed small miracles of mechanical engineering). However the nearby newspaper printing works, containing a range of machines involved in the printing industry from hand type setting to computer equipment, was a gem that needs preserving. The fort at Albany was well kept and had an interesting New Zealand WW1 connection, and Whale World was well presented but needed more time than we could afford. The pier at Busselton was indeed long (over 1 km), and the wharf at Bunbury disappointing since only the three people closest to the guide could hear about its history and refurbishment. The final item on the tour at Dardanup just outside Bunbury, was a revelation. Several devoted local farmers have combined to develop the heritage park which houses an excellent range of heavy plant. Notable was the fact that they set up a mill which produced the timber for the buildings housing the collection. And many of the items had been restored to working condition – we were privileged to see a giant Euclid TC12 bulldozer rumble its way out of its garage. Best of all, the park is set up with a very pleasant café area – I think it is a model of the sort of thing that can be done with heritage projects.

A lot was crammed into almost four days, but I still regret not being able to get to see the start of the famed Golden Pipeline and the Mundaring weir for which C Y O'Connor (who played an important part in early New Zealand development) was responsible. It remains an important example of the serious impact that ignorant media people and self seeking politicians can have on engineering projects.

The conference proper started with a lecture from Lt General John Sanderson, AC (a civil engineer, and former Governor of Western Australia) who reminded us of the huge engineering successes of past nations, Greek, Roman, Cambodian, many of whose achievements have been lost with the passage of time. Some developments of the past such as the Snowy River project may not be possible in the future because of changed limitations demanded by the environment. Sanderson observed that “it is sobering to think that Australia has 60,000 years of aboriginal heritage – where will our heritage and culture be in another 60,000 years?”

The papers that followed were presented in various groups:

- Heritage practice for professional engineers
- Heritage structures
- Conservation of large timber structures
- Industrial heritage of Australian hardwood industry
- Heritage infrastructure
- Development of wireless communication in Australia
- Heritage skills
- Engineering heritage of resources development in Australia
- The engineering heritage of water supply

Bill Jordan promoted specific recognition of the conservation and heritage engineering as a separate area of practice and presented a draft guideline for registration in this area. Michael Clarke pointed out the need for planning for protection and recovery of heritage buildings etc following an extreme event.

A young engineer, Andrew Prattley, spoke of the need to engage young engineers in heritage and provided some proposals for doing this in university courses. I couldn't help thinking of the great job the George Mullinger has been doing in this regard at Canterbury. Is this under threat now? Robert McWilliam from UK spoke about the way in which ICE handle both archives and heritage matters. Useful material for our work. A paper on “Preserving and passing on heritage trade skills” was not able to be presented at the conference but is found in the CD containing the proceedings. Of course my friend C Y O'Connor received significant mention in various papers and also in a book “Rivers of Steel” just launched. And during the conference we were also taken to the old and the very new Maritime Museums in Fremantle.

Other papers, evident from the list above, described a number of heritage items, particularly relating to the state's hardwood industry, and measures being taken to conserve them. We even had a New Zealand paper presented by Lloyd Smith on the use of Australian hardwoods in southern NZ. As mentioned, most of the papers have been presented on a CD. If anyone is interested, I would be able to copy the disc and send it out.

The conference was a great success and as ever it was most enjoyable meeting up with a very friendly and knowledgeable bunch of Australians and also a team from the UK. And for the record I did get a photo of a statue of the esteemed C Y O'Connor!

4 Report on the significance of the Belfast Freezing Works by Bill Pitt

Although it is difficult to establish when many freezing works were built this works was built on a green field site. Thus it can be confidently established that it was the second freezing works built in New Zealand. It was furthermore the first to export meat from Canterbury. Many had previously existed as abattoirs or canning works or the like and then extended their activities to include freezing meat

The works is located a short distance along Factory Road which turns off the main highway north from Christchurch at Belfast. A number of buildings on the site are suspected to be original or near

original buildings and one is possibly the engine room as it is complete with some very early machines with hemp rope drives.



An early Machine with hemp rope drive.

It is further of significance in that it was the first works in which the Engineer Frank Coxon was involved from the beginning with the site selection and design. It appears that J C Maddison was involved as the Architect.

This is thus a very significant site historically and of national importance, particularly as there are no early buildings left on the site of the first works built at Burnside in Dunedin. The Historic Places Trust and the Heritage department of the Christchurch City Council are now becoming aware of the historic significance of the site.

The plant belongs to the Primary Producers Cooperative Society PPCS and was expected to be closed down within 10 years. This suggests that records should be made of early buildings and equipment in them before they are destroyed and that consideration should be given to the possibility of negotiating for the preservation of significant buildings on the site, particularly the engine room.

A report on the success of a shipment of meat on the S.S. Strathleven from Australia which had arrived in London in Feb. 1880 was cabled from the London office of the New Zealand Loan and Mercantile Agency Company to their office in Christchurch. John Cooke, in charge of the Canterbury business, realised the significance of this for opening up overseas markets for Canterbury meat producers. He was possibly instrumental in alerting John Grigg of the well known Longbeach station in South Canterbury to the significance of this development and Grigg called a meeting of run holders in November 1881. This resulted in the formation of the Canterbury Frozen Meat and Dairy Produce Export Company Limited known as the CFM Co.

On the 19th of June 1882, 34 acres of land (13.76ha) at Belfast just north of Christchurch were inspected by Messrs Grigg, Banks, Cooke and Coxon and the next day were purchased for the construction of the freezing Works. Frank Coxon was commissioned as Engineer to design the Works. The works were completed and production commenced on the 12th of Feb 1883. In Dec 1888 a fire at the works put the freezers out of action and the well known hulk, the Edwin Fox, fitted out as a freezer, was hastily towed from Dunedin to Lyttleton to freeze the output from Belfast until the freezers could be restored.

The Works continues in service today.



A typical early building possibly the engine room of the CFM works or Borthwicks next door.

The following documents were referred to in the preparation of this report:

- 1) A History of the New Zealand Refrigerating Company, by Cyril Loach, 1969
- 2) A History of the Frozen Meat Trade, by Critchell and Raymond, 1912.
- 3) Record of New Zealand Meat Export Works. Compiled by Ian D. Syminton, 1972.
- 4) The Canterbury Frozen Meat Company Ltd., G R MacDonald

5 Australasian Engineering Heritage Conference, Dunedin, Nov 2009

Engineering heritage conferences are held in Australia on a biennial basis. NZ holds an engineering conference every five years with the second of these being an Australasian conference which would replace/include one of the Australian biennial conferences. This puts our next conference in New Zealand in Dunedin in 2009 (the third Australasian conference). Planning is underway. Please start considering papers for presentation at the conference now. Your contributions will be appreciated.

The Conference will be held late November (preliminary dates are for a 3 day conference in the last week of November) on campus at the University of Otago, Dunedin. This location, close to the central area of the city, offers a conference venue and a good choice of accommodation, entertainment, dining and tourism.

IPENZ Engineering Heritage and the University of Otago History Department will be co-hosting the conference. The Conference title is: Engineering in the Development of a Region - Heritage & History

Themes and topics include:

- Agricultural Development (irrigation & drainage; refrigeration engineering; process industries; machinery; sawmilling; buildings).
- Power (hydro-electric; wind; steam; diesel; gas).
- Transport and Communications (roading; bridges; railways; shipping and shipbuilding; harbours and ports)
- Resource Extraction (Gold - mining; sluicing; dredging; tunneling; smelting. Coal. Scheelite. Oil shale).
- The People (entrepreneurs; communities; businesses; manufacturers; engineers; innovators).

A pre-conference 3 or 4 day tour will be organised to include a range of engineering heritage sites in southern New Zealand. A local tour of Dunedin sites will be included in the programme.

Conference updates will be available in the next newsletters and on the IPENZ web site www.ipenz.org.nz/heritage.

Contacts:

John Henderson (Conference Convenor) email: WJohn.Henderson@xtra.co.nz

Lloyd Smith (Chapter Chairman) email: LloydS@voland.co.nz

6 IPENZ Heritage website

The IPENZ Engineering Heritage website has been established for some time now and relies on volunteers to contribute their knowledge by adding additional items of interest to it. If you are interested in engineering heritage, please go to www.ipenz.org.nz/heritage/.

An article about the beam engine that has been restored at MOTAT was published in “The Shed” magazine in October/November 2007. The link to this article is now on the Heritage website.

7 The IPENZ Engineering Heritage Database and Register

The procedures for entering the names and details of engineering heritage sites and works on to the IPENZ Engineering Heritage Database and Register are available by contacting the Heritage Administrator at heritage@ipenz.org.nz. People are encouraged to submit suitable works or sites for the Database and then where appropriate nominate them for the Register.

The aim of the Database is to enable engineering heritage items to be identified and quickly entered on to the IPENZ heritage website.

8 Biographical Dictionary of Civil Engineers

The Institution of Civil Engineers in London have finalised Volume 2 of the Biographical Dictionary of Civil Engineers covering the period 1830 to 1890. It will be published this year. Members of the National Engineering Heritage Committee provided essays on:

1. James Melville Balfour 1831- 1869
2. Charles Napier Bell 1835 - 1906
3. John Blakett 1818 - 1893
4. Charles Edward Fooks 1829 – 1907
5. John Rochfort 1832 – 1894
6. Joseph Thomas 1803 - ?
7. John Turnbull Thomson 1821 - 1884
8. George Thornton 1829 - 1914
9. Charles Walkden 1826 – 1900?
10. William Weaver 1828 – 1868
11. James Wylde 1824 - 1908

9 News from the Heritage Chapters

9.1 Auckland Chapter

Victoria Bridge

John La Roche (Chairperson) attended the centenary celebrations of the Cambridge High Level Bridge on December 15th. This was a very well organised and publicised function with a full page

spread in the Waikato Times on the previous day, including a photo with Barry Butcher, explaining the engineering and historical significance of the structure. The function celebrating the centenary was with much pomp and ceremony with the Governor General and other dignitaries. Barry Butcher spoke before the cutting of the ribbon and unveiling of the IPENZ Plaque.

As a result of this, John Richards (IPENZ Waikato Branch and co-ordinator of the event) is interested in establishing a Waikato Chapter. He will attend the next Auckland Chapter meeting on March 13th.

Ruaapekapeka Pa

DOC staff mounted the plaque on a large rock near the waharoa (entrance archway) at the Ruaapekapeka Pa site. The unveiling was a dawn ceremony on Saturday 16 February attended by Rob Aspden, and 11 others representing IPENZ. Kepa Morgan, (Associate Dean Maori School of Engineering), Tyrone Newson and his father are of Maori descent responded to Maori challenges and lead a Waiata. Rob Aspden represented the Chapters and spoke on behalf of IPENZ. The occasion was much appreciated by the tribes involved, and Rob reports that it was a spiritual and moving event. A paper on the military significance of the pa is currently planned for the new ICE heritage journal.



Rob Aspden and Raumoana Kawiti, great-great-grandson of Chief Te Ruki Kawhiti who engineered Ruaapekapeka Pa, at the plaque unveiling.

Student Involvement

Liz Godfrey, Associate Dean Undergraduates at the School of Engineering, has requested help from the Auckland Chapter to conduct a 3 hour tour for about 40 students in her History of Engineering course. A tour of Auckland City heritage engineering sites is being planned for Friday 11 April. Members of the committee are delighted at students learning about engineering heritage.

9.2 Wellington Chapter

The North Island Main Trunk Railway Line (NIMT) centenary celebrations are to be held this year. Four plaques will be unveiled by IPENZ:

1. Raurimu Spiral
2. Makatote viaduct
3. Makohine viaduct
4. Wellington-Manawatu railway

There will be commemorative stamps produced by NZ Post and the following events have been organised:

1. 6 – 8 August - a recreation of the Parliamentary Special train

2. 24 -27 Oct (Labour Weekend) - railway enthusiasts festival of steam event to be held in Feilding
3. early Nov - a re-enactment at the Last Spike site involving District Council, local school children and 2 trains coming from Auckland and Wellington.
4. Tranz Scenic will mark the centenary of the first public passenger service. DoC will open the restored Hapuawhenua viaduct (a tunnel walk-through) and the old coach road which used to link the railheads for passengers & freight before the NIMT was completed.

The Historic Places Trust is proposing Waiouru – Raurimu to be registered as an historic area. A paper on the NIMT railway is also to be prepared for the new ICE heritage journal.

9.3 Canterbury Chapter

The Canterbury Chapter needs your help. The committee has been depleted over the past few years and new members are required. Please contact the Heritage Administrator heritage@ipenz.org.nz if you would have an interest in being involved and would like more information.

9.4 Otago Chapter

The Automobile Association has surveyed 22,000 New Zealanders on what they considered were the “101 Kiwi must do” places to go to or things to do. The results showed that the top 2 historic sites (Karangahake Gold Mine and Central Otago Rail Trail) both have an engineering theme. This offers an opportunity for Heritage Chapters to work with local visitor centres to get the engineering message across. An informative DVD is being made for all B & B's along the Otago rail trail and creates another opportunity to include engineering heritage information.

Members of the Chapter are actively involved in preparations and planning for the 2009 Australasian engineering heritage conference.

10 IPENZ Centenary 2014

A committee to manage activities for the IPENZ centenary will be convened in 2009. If you have a particular interest in this event, please contact the Heritage Administrator heritage@ipenz.org.nz.

11 Committee Contacts

For an up to date list of representatives on the new Engineering Heritage Board and the Chapters in Dunedin, Christchurch, Wellington and Auckland, please refer to the Engineering Heritage link on the IPENZ website www.ipenz.org.nz. Feel free to make contact if you are interested in joining a Chapter or if you have some information to request or share.

12 Future newsletters

Your contributions to this newsletter would be gratefully received - news of progress, achievements and /or concerns being experienced in each area.

If you are interested in receiving an email copy of the newsletter when it comes out please register your email address with the Heritage administrator heritage@ipenz.org.nz.

Best wishes,
Rob Aspden
(Chair, NEHC)