IPENZ Engineering Heritage Newsletter
June 2007

Greetings to all involved with engineering heritage around the country. It has been some time since the last newsletter but it has not meant we have been idle!

1 14th National Engineering Heritage Conference 2007
19 – 21 November 2007
Trinity Conference Centre, Crawley, Western Australia

MARK YOUR DIARY NOW – REGISTRATIONS OPEN ONLINE ON 19 JUNE.

Conference themes:

- Promoting Heritage Conservation Practice for Professional Engineers
- Preserving & Passing-on Heritage Trade Skills
- Industrial Heritage of the Australian Hardwood Industry
- Conservation of Large Timber Structures
- Development of Wireless Communication in Australia
- Engineering Heritage of Resource Development in Australia
- Engineering Heritage of the Water Industry

For further information about the Conference and Pre-conference Tour please contact the Conference Secretariat:
Debrett's Conference & Event Management
PO Box 441, NEDLANDS, W.A. 6909
Phone: +61 8 9386 3282; Fax: +61 8 9386 3293
Email: engheritage@debretts.com.au
Website: www.debretts.com.au/engheritage

The conference will be in Perth starting with a reception in the evening on Sunday 18 November. The conference proper starts the following morning at Trinity College in the University of Western Australia, and concludes on Wednesday 21 November.

And of course there is a three day pre-conference tour starting on Friday 16 November. This tour starts in Perth, travels to Albany on the first day, to Busselton on the second and returning to Perth on the third day.

Inexpensive student and staff accommodation will be made available at Trinity. There is also very reasonably priced motel style accommodation. There will be at least three domestic carriers competing on flights to Perth - Qantas, Virgin Blue and Tiger Airways (parent Singapore Airlines). Details will be available on the website.

2 Future engineering heritage conference to be held in Dunedin in 2009

Engineering heritage conferences are held in Australian 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 for November 2009 on the University of Otago campus, with associated tours to North Otago and Central Otago heritage sites. Preliminary themes and topics are being developed (with some reflection on Perth 2007 topics), with a focus on land settlement and agricultural developments through engineering innovations and achievements. Please start considering papers for presentation at the conference now. Your contributions will be appreciated.

3 News of items on the Database being considered for the Register

There are a variety of items that the National Engineering Heritage committee (NEHC) has received on the Database being considered at present for entry on to the Register. Particular emphasis is being given to marking the centenary of the completion of the North Island Main Trunk railway, for which the items being considered are:

- Raurimu Spiral
- Makatote viaduct
- Makohine viaduct
- Wellington and Manawatu railway

Other items being considered include:

- The Mt Eden Shot Tower
- Hikitia floating crane
- Oamaru freezing works

And following the recent meeting of the National Engineering Heritage Committee meeting approval was given for the following two heritage works to be included in the Register:

- Ruapekapeka pa (in Northland)
- The Kopu bridge (near Thames)

Details of these two items will be given in the next newsletter.

4 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 go to www.ipenz.org.nz/heritage/ .

5 The IPENZ Engineering Heritage Database and Register and heritage identification

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. It is possible for heritage items to be added to the Database at any time by members of the Institution or members of the public. Obviously there will be a cursory review to check that inappropriate items are not being entered.

Once the item is entered on to the database the aim of the Register program is to assess engineering heritage items for their heritage, social and community significance and record appropriate items and people on the Engineering Heritage Register. Following registration, arrangements may be made for special recognition by means of some or all of the following:

- The production of an information brochure
- The provision of an interpretation panel
- The installation of a plaque.

The procedures are intended to be reasonably flexible and should be used as a guide and interpreted to suit particular situations.

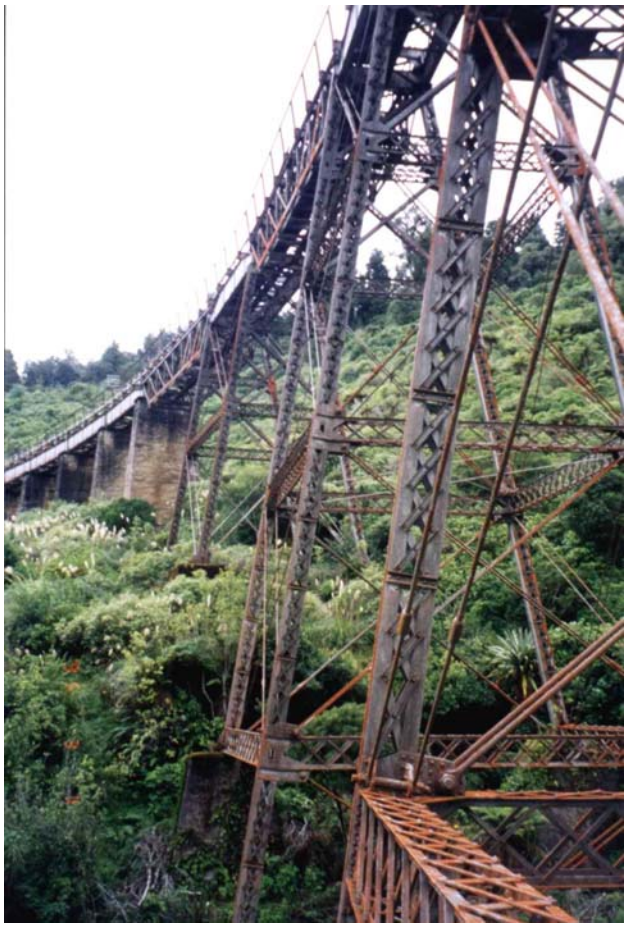
The items which have recently been awarded plaques are:

The Rimutaka Summit & Incline Railway
The Koro Koro dam
The Musick Point radio station
The Lower Karori dam

6 Restoration Work Begins on NIMT Hapuawhenua Railway Viaduct

Work has commenced to ensure the Hapuawhenua railway viaduct near Ohakune survives for the benefit and enjoyment of future generations. Constructed in 1908 to complete the last link in North Island Main Truck railway line, the Hapuawhenua viaduct is 284m long and 45m high at its highest point. This viaduct is the larger of two curved viaducts were on this section of line. It was bypassed in 1987 by a new curved concrete viaduct located approx 100m downstream, to carry the electric locomotives on a larger radius higher speed curve. The original steel Hapuawhenua viaduct has suffered from neglect since then with timber sleepers being stolen from the deck and acidic volcanic ash from the 1995 Mt Ruapehu eruption accumulating on the steelwork. Because of its location in an isolated corner of the Tongariro National Park, the only access is via the active NIMT rail corridor which is restricted to authorised persons only. The majority of the structure remains in good condition; however the ash has accelerated corrosion of the steelwork at joints and in some horizontal surfaces.

The Tongariro Natural History Society, which undertakes a range of conservation projects, has recently obtained funding from the Stout Trust for restoration work on the viaduct. This has been supplemented by funding from the Department of Conservation. The funding has enabled TNHS to clear vegetation from the base of the viaduct piers to reduce the rate of corrosion. Planning is underway to arrange for cleaning of the upper levels of the viaduct and to address the corrosion caused by the acidic ash and vegetation. Future plans include re-installation of a walkway across the viaduct. The Ohakune community is in the process of developing a walking track along the Old Coach Road which once provided a link between the north and south sections of the NIMT before the viaduct was completed. This track will provide public access to the viaduct and it is intended that it will be accessible in time for the NIMT centenary celebrations in 2008.



7 Historic Suspension Bridge in Taranaki Re-opened.

In June 2006, the Bertrand Rd suspension bridge over the Waitara River in north Taranaki was re-opened after several years of closure to traffic and pedestrians. Built in 1927 the current bridge replaced an earlier bridge at the same site. The Bertrand Rd Bridge has a suspended span of 61m and is unique in that the main cables have a significant catenary in both the vertical and horizontal planes, resulting the "cradled" appearance. The cables carrying the hardwood deck are supported on hardwood timber towers, one of which is at the top of a braced timber tower rising from near river level. The bridge had undergone several modifications during its life, including the installation of steel stiffening trusses to the deck, however due to deterioration of the timbers, the bridge was closed in

1995 to vehicle traffic by the owners, the New Plymouth District Council, and it was subsequently was closed to pedestrian access in 2004. It seemed likely that the bridge would be demolished.

Nearby residents were keen to ensure it was retained, and hence the Bertrand Rd Suspension Bridge Trust was established and was successful in raising much of the $600,000 necessary for the restoration work. A Conservation Plan was prepared by Conservation Architect Chris Cochran of Wellington. A team from Frame Group from Auckland, led by engineer, Trevor Butler, prepared remedial work design and specifications and managed the restoration work. Extensive re-construction was necessary which involved complete dismantling and reconstruction of the timber deck, replacement of transoms and deck joists and several other timber members with recycled hardwood and some new hardwood imported from Australia. The original main cables and anchors were retained but in one location where corrosion had weakened the cables, a specially designed and tested splice has been installed. The construction work was carried out by Mackenzie Construction Ltd of Bell Block. The work was particularly challenging due to the weight of the heavy timbers and the difficulty in removing the original steel bolts that appeared to have "grown roots" into the timber. As much of the original hardwood timber as possible was retained and installed as decking and running planks.

The restored bridge has been designed to carry light vehicles up to 4 tonne maximum weight and up to 20 pedestrians on a walkway on one side of the bridge deck. A water pipe has also been installed on the upstream side of the bridge for future water reticulation in the District. The re-opening of the bridge by the New Plymouth District Council Mayor, Peter Tennant, means that the towns of Tikorangi and Huirangi are once again within easy access of each other, rather than being separated by a 10km journey via Waitara. Since being restored, the bridge has attracted local sightseers and tourists as well other unusual uses, including being the scene of a wedding at mid-span.

8 Biographical Dictionary of Civil Engineers

The Institution of Civil Engineers in London is producing Volume 2 of the Biographical Dictionary of Civil Engineers covering the period 1830 to 1890. We have helped them by producing a number of essays for civil engineers who trained in Britain but had significant input into the engineering development in New Zealand during that period. The biographies provided were for:

- James Melville BALFOUR (1831 – 1869)
- Charles Napier BELL (1835 – 1906)
- John BLACKETT (1818 – 1893)
- Charles Edward FOOKS (1829 – 1907)
- John ROCHFORT (1832 – 1894)
- Joseph THOMAS (1803 - ?)
- John Turnbull THOMSON (1821 – 1884)
- George THORNTON (1829 – 1914)
- Charles WALKDEN (1826 – 1900?)
- William WEAVER (1828 – 1868)
- James WYLDE (1824 – 1908)

These essays are to be entered into the Engineering Heritage Database. As other biographies of significant engineers working in New Zealand come available these will also be entered there.

9 News from the Heritage Chapters

9.1 Auckland Chapter

The Auckland Chapter remains very active and is involved in a wide spectrum of issues relating to Heritage within the greater Auckland area and beyond. Of particular note is the "Heritage Walks – The Engineering Heritage of Auckland" brochure that have been produced and which are now on the web. You can view this information on www.heritagewalks.co.nz .

The branch is currently working on a book "Engineering in Auckland".

9.2 Wellington Chapter

Discussions are underway with Walk Wellington, a non-profit organisation which guides walking tours around the inner-city. They also cater for specialist interest groups and currently have a request for a walk with an engineering heritage focus. This is an ideal opportunity for the Wellington Chapter to pursue their aim to get their own Heritage Walks brochure developed. Working with Walk Wellington is an opportunity to test both the route and the information that will go into it.

The North Island Main Trunk Railway Line centenary celebration is to be held in 2008. The NEHC is providing support for this and to ensure co-ordination comments relating to this centenary should be directed to the Heritage Administrator heritage@ipenz.org.nz.

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

Walks are not only healthy for our bodies but now our minds too. The wealth of information that our Chapters have in developing local engineering heritage walks is also a part of the activity being generated in Dunedin. In recognition of their efforts, funding has been received from the Dunedin City Community Grant Scheme to help with costs of printing a walks brochure. Support to and co-operation with other groups is assisting other industrial heritage tours & events.

Discussions continue with interested parties in North Otago, on the possibilities of sites for recognition of engineering achievements associated with refrigeration & frozen meat export. Oamaru Harbour precinct is one of the earliest and still accessible sites in New Zealand.

Planning is underway for the conference in November 2009. The History Department at the University of Otago will co-host the event with IPENZ Engineering Heritage.

10 IPENZ Centenary 2014

A committee to manage activities for the 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 committee of the NEHC and the Chapters in Dunedin, Christchurch and Auckland, please refer to the Engineering Heritage link on the IPENZ website www.ipenz.org.nz. Feel free to make contact if you have some information to request or share

12 Future newsletters

We hope to produce newsletters on a more regular basis. Your contributions 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 .

Above all, start thinking about the engineering heritage conference coming up in Dunedin in November 2009. Watch this space for details!

Best wishes,

Rob Aspden
(Chair, NEHC)