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REAAA
Driving Progress

ROAD ENGINEERING ASSOCIATION OF ASIA & AUSTRALASIA (NZ)

SPECIAL POINTS OF INTEREST:

12th REAAA Conference

On 20- 24 November 2006 delegates from all around the world attended the 12th REAAA Conference in the Philippines. The conference was well attended and very successful with the New Zealand REAAA chapter being represented by Mr Rick van Barneveld, Transit New Zealand and Mr Ian Stenberg, Beca Infrastructure.

At the conference keynote presentations from prominent experts coincided their topics with the papers being presented at the technical sessions. Prof Ian Johnston, Australia for his topic on Road Safety; Prof, Haruo Ishida, Japan on Traffic Engineering and ITS; Mr Tsuneo Bekki, Japan on Preparedness for Road Disaster in Addition to Road/Bridge Projects in the Philippines; Mr Anthony M Mabasa, Philippines on Public Acceptance of Tollways and Financing and Mr Manuel Bonoan, Philippines for Road Development Program in the Philippines. There were 89 technical papers presented at the conference and compiled in the following categories;
Road and bridge Asset Management,
Environment and Sustainability,
Heavy Vehicle Dynamics,
Local Area Traffic Management,
Pavement Design and Performance,
Project Management and Financing,
Road Construction and Maintenance,
Road Management and Administration,
Road Planning and Design,
Road Safety Engineering,
Road User Behavior,
Traffic Engineering (including ITS),
Transport Economics and Freight,
Transport Planning and Evaluation.

Guest of Honor, President Manny Villar discussed the significant role of road engineering as a major keystone in nation-building Photo courtesy of http://www.senate.gov.ph/photo_release/2006/photo_rel120506.asp

If you are interested in viewing the presentations from the conference please contact lisa.pallister@reaaa.co.nz

2007 Low Volume Roads Workshop

The call for papers for the 2007 Low Volume Roads Workshop has just closed and planning is now well advanced for the 2007 workshop, to be held at the Rutherford Hotel, Nelson from the 18th to 20th of July.

The committee will finalise the papers and registration packs to attend this event will be available soon.

The theme of the workshop is **Key Issues.** Phil Paige-Green, Vice-President for Africa of IAEG and Robin Dunlop, Chairman of the National NZ Institute of Management are the two key note speakers for the workshop.

Further details for the 2007 Low Volume Roads Workshop are available at www.roads.co.nz

CYBER SENTINALS GUARD GATES TO MILFORD

After a road maintenance supervisor was killed by a massive avalanche, on the Milford Road (SH94) in 1983, a risk management programme was established by Transit New Zealand to monitor, assess and control the avalanche hazard on the road. The sophisticated programme used today enables the road to remain open with optimum safety to all road users.

"…. a risk management programme was established by Transit New Zealand to monitor, assess and control the avalanche hazard on the road."

The Milford Road avalanche hazard is managed for Transit New Zealand, by a specialist avalanche control team, within Works Infrastructure, as part of the SH94 Milford Road maintenance contract.

The team predict the probability of avalanches occurring (avalanche hazard forecast) and control (both active and passive) the avalanche hazard to optimise safety and minimise road closures.

The avalanche hazard forecast is compiled from information that includes existing avalanche start zone snow-pack conditions (snow pit studies), current weather data (from automated road and high level weather stations, which transmit data from the mountain top), the weather forecast and local knowledge of avalanche activity.

This management programme is recognised as international best practice and one of the most technologically advanced avalanche programmes around. Part of the success of the programme is due to the utilisation of Hi tech environmental telemetry and communications, positioned at strategic locations over looking the road corridor. The technical programme is agreed by a technical committee comprising representatives from Transit, Opus (network consultant), Works and external specialists.

There are 27 telemetry systems, 6 of which are high level along with 5 high level radio repeaters that Transit have established. This harsh environment presents many challenges such as providing enough power to run the systems, with design focussed on low current usage. High winds means over engineering of towers and components that are also subject to lightening strikes. Poor radio frequency paths requires high gain components which are delectable to Kea's and must be protected. Given the wind chill and precipitation combination the formation of rime ice is a problem that is managed with the use of Iso-Propyl Alcohol irrigators that spray key components.

Other special projects to mitigate the risks associated with the Homer Tunnel, include the design and installation of a UHF radio linked, multiple handset, emergency satellite telephone system. Traffic signals have been installed to control traffic and also monitor traffic movements. This can be remotely accessed anywhere in the world and has a multiple generator system co-ordinated by an electronic control system. There are numerous future projects being investigated and considered by the Technical Committee, all ensuring that the road users and New Zealand tourist industry are protected utilising industry best practice.

REPORT ON 4TH WORLD CONGRESS ON EMULSIONS - LYON, FRANCE OCT '06

The bitumen industry was the major industry represented at this world emulsion conference which also included dairy, foods and cosmetic industries.

The New Zealand participation was four attendees from the roading industry, including Allan Tuck, Higgins Contractors and John Vercoe, Works Infrastructure, co-authors of the report.

The opening scientific address was given by the Nobel Prize winning chemist Professor Jean-Marie Lehn on "Supramolecular Chemistry and Organized Polymolecular Assemblies". During his address Professor Lehn took the assembly through co-valent bonding to supramolecular in clear simplified steps. His intellect was apparent by his ability to simplify a complex topic and put it in to terms that his audience could understand. At one of the lunches a delegate who had had students study under Professor Lehn made the comment that he was a most modest and helpful person who gave credit to others.

All papers submitted to the Congress were displayed on rotational days, and therefore, all authors had a full public viewing of their complete work. From all the papers submitted pre-Congress, the various section chairmen and their committee selected those that would be presented at each plenary sessions. There were a number of plenary sessions being presented simultaneously. Whilst there was a strong university presence of academics it was interesting to note that section chairmen were strong in their criticisms, such as, "don't present a paper on how you achieved a few drops of a "great product" in a laboratory unless you can demonstrate how to produce that "great product" commercially".

The major thrust in Europe is the use of molecular chemistry, much like genetic engineering, to modify or replace chemicals which are perceived to be health and safety or environmentally unfriendly. The European Union has introduced the "REACH Programme" which requires the evaluation and registration of all chemicals and products or processes that utilise chemicals. The thrust is to be health and safety and environmentally friendly or demonstrate how chemicals and processes can be managed to achieve this.

On the Bitumen side; molecular chemistry demonstrated the variable properties of bitumen which is a function of nature's raw crude. Refining is dependent on the source of supply and indeed there are variations within the same oil fields and this is presenting challenges in managing this variability. NZ sourced crude is not suitable for all bitumen applications and European companies will source the differing types of Bitumen in the chemistry sense, and haul considerable distances for specific applications. The world consumption of Bitumen is approximately 100 Million tonnes and NZ consumes approximately 170 Kilo tonnes. Availability for specific end use, H&S and Environmental are strong drivers in modifying bitumen. Sustainability of assets as in longer performance life, energy consumption and avoiding future disruption is a major factor in converting Bitumen into value added performance products. Some South American countries were surprisingly advanced in this field.

Another interesting project being funded was de-emulsification of the crude oil/clay/water mixtures trapped in oil fields, especially the shale reservoirs. If the clay can be economically removed from the contaminated crude oil, which can not be achieved at present, this will unlock significant crude reserves for refining.

Green products also figured such as the vegetable oils which are being used as supplements for diesel fuel. They are also used to flux bitumen. A Dutch company has produced green product which significantly enhances the properties of bitumen for spray seals.

Millau Viaduct, France (left and above)

REPORT ON 4TH WORLD CONGRESS ON EMULSIONS cont...

As with many European conferences support was absolute and came from: des Ministeres Republique Francaise; de l'Education Nationale; de l'Equipement des Transports, de l'Amenagement du Territories, du ourisme et de la Mer; de l'Economie, des Finances et de l'Industrie; de la Region Rhone-Alpes; de la Communaute Urbaine du Grand Lyon; de la Ville de Lyon; de la Chambre de Commerce et d'Industrie de Lyon.

Further support came from the professions and associations ranging from chemical, asphalt, transport, colloid and interfacial scientists, international Universities and roading authorities. There were a number of stands which incorporated suppliers of scientific, process and laboratory equipment.

Sponsors were a mixture of Oil, Construction, Bitumen, Dairy, Foods, Cosmetics and Support Industries.

The EIFFAGE Group who constructed the Millau Viaduct was represented by their subsidiary Appia who laid the 10,000 tonnes of mix on the deck. Interestingly the Millau Viaduct did not figure on their stand as they considered it to be old news. The authors took the opportunity of driving over the Millau Viaduct and we can report it is indeed a magnificent structure which is functional, aesthetic and has a design life of 150 years.

Upcoming Conferences

Bryan Pidwerbesky, Fulton Hogan is organising a 3 day 20-22 June 2007) study tour to Texas, immediately preceding the 9th Int'l Low Volume Roads Conference being held in Austin, Texas during 24-27 June 2007; for more information, go to http://www.trb.org/conferences/9lvr/
The tour is being organised with the support of the Texas Association of County Engineers and Road Administrators (TACERA), and other organisations in Texas. Texas has a large network of low volume roads, and also seals over 18,000 km of road every year. The Texans are doing some excellent field trials and research relevant to NZ. The study tour and conference are focused on low volume roads, in a range of topics that could include asset management, dust suppression, disaster recovery, emulsion sealing and others.
For further details, please contact: bryan.pidwerbesky@fh.co.nz

Other conferences coming up in 2007 are:

5—6 February - International Conference on Roads and the Environment, Geneva

19 - 20 February - 7th Annual Land Transport Summit, Hyatt Regency, Auckland

20 - 23 February - Talking and Walking Sustainability Conference, University of Auckland, Auckland

28 - 29 March - 2nd Road and Pavement Engineering & Management Conference 2007, Melbourne

30 April - 15 May - Unsealed Road 2 day Workshops, Whangarei, Hamilton, Palmerston North, Christchurch and Dunedin

7- 9 June - Ingenium Conference, Invercargill

18 - 20 July - Low Volume Roads Workshop, Rutherford Hotel, Nelson

25 - 27 July - "Transport – The Next 50 Years", Christchurch Convention Centre, Christchurch

27 - 28 August - Roading NZ Awards and Conference, Duxton Hotel, Wellington

18 - 20 November - Erosion Control Conference, New Plymouth International Hotel, New Plymouth

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REAAA (Road Engineering Association Asia Australasia) is an international fellowship of members interested in the science and practice of road engineering. Currently there are more than 1,200 members from 27 countries with over 100 members in the New Zealand Chapter.

Key objectives of the association are:

- To promote and advance the science and practice of road engineering and related professions.
- To educate and seek to improve, extend and elevate the technical and general knowledge of persons concerned with road engineering.

Chapter activities in New Zealand include:

- Regional seminars/workshops
- Site visits to projects of interest
- Regular newsletters on current developments and practices
- Network opportunities with other members in NZ and overseas
-

Membership is open to individuals & companies, for more detail on membership contact: Lisa Pallister, Secretary, lisapallister@reaaa.co.nz

2006 REAAAA Roadshow

The 2006 Roadshow was held at the five main centres, commencing in Auckland on Wednesday 13 September and finishing in Christchurch on Tuesday 19 September. Once again there were a great range of topics which were very well received. The feedback from the 200 attendees has been very positive with plenty of encouragement to continue the annual roadshows. It was commonly noted that the roadshow enables great networking opportunities and is a fantastic forum for the exchange of information and innovative ideas.

The topics covered during the roadshow are listed below. Copies of the presentations are available on the REAAA NZ Chapter website at www.reaaa.co.nz please feel free to send the link to anyone you think may be interested in viewing the presentations.

- The Specification for In-situ Basecourse and Sub-Base Stabilisation, Presenter: Thorsten Fröbel, (on behalf of the Stabilisation Working Group)
- Using Formal Programme Management Techniques to Ensure Delivery of Large Capital Programmes, Presenter: Gerald Fender, MWH Sydney
- Delivering a roading project in an urban community, Presenter: Dr Graham Ramsay, Beca Infrastructure
- Axle Limits on New Zealand Roads, Career and Personal Development with a Masters of Engineering Transportation, Presenters: Graduates of MET
- State Highway Corridor Safety Improvements, Presenter: Colin Brodie, Transit New Zealand

The committee is looking forward to coordinating another successful roadshow for 2007 and planning will begin in the New Year.

The dates for the 2007 Roadshow will be set in the New Year and will be advised in our next newsletter and on a our new and improved website, which will be launched at our Annual General Meeting early next year.

If you are interested in submitting a paper/presentation for the 2007 Roadshow please contact the chapter's Secretary, Lisa Pallister at lisa.pallister@reaaa.co.nz for further details.