

NEWSLETTER

WESTERN CANADA JOINT GROUP OF CHARTERED ENGINEERS

THE INSTITUTIONS OF CIVIL, ELECTRICAL, MECHANICAL, AND STRUCTURAL ENGINEERS

CALGARY CHAPTER

Letter from the Chairman

I would like to welcome all members of our sponsoring Institutions to the 1992 session of the Calgary Chapter of the Western Canada Joint Group of Chartered Engineers. The year 1991 was difficult for some of our members. The recession caused relocations, and changes of circumstance. Our group however was able to make progress. We now include the members of the Institution of Structural Engineers within our ranks.

We look forward to a most productive 1992, anticipating more participation from our members, and increasing our active membership. It is our objective in 1992 to include members of the Institution of Chemical Engineers in our group, that we may increase diversity and interest. Your Executive Committee has also changed the format of our technical/social meetings, and has developed more attractive programmes.

This year we have organised combined technical and social meetings so that spouses and family can become more involved. We have also encouraged our members to present papers and lead discussions in their field of experience. Ron Girardau and Ted Maciag will present papers on their many years of construction engineering; Mike Milligan will present a paper in mechanical engineering, and Paul Camwell in electrical engineering.

We also expect an overseas visitor from Hong Kong—Mr. H.K. Cheng, O.B.E., J.P.—on July 5th. Mr. Cheng, a consulting engineer, has for the past ten years been a member of the Hong Kong Legislative Council and the Executive Council. He was formerly Vice President of the Institution of Structural Engineers, in London, and President of the Hong Kong Institute of Engineers. He will present current news from Hong Kong including news of the new University of Science and Technology, and the controversial multi-billion dollar Airport and associated infrastructure.

—Please refer to the Technical/Social programme below—.

I hope that you will come along and support the activities of your group, make new friends and develop new opportunities.

I look forward to seeing you at our next meeting.

Pai Lin Li
Chairman

FEATURE ARTICLE
Biomedical Engineering

by Nigel Shrive

Professor of Civil Engineering, the University of Calgary

This is a new field of engineering, involving engineering related to a fascinating machine—the human body. The range of engineering is immense, and practice varies from plant and equipment engineering in a hospital through development engineering for medical equipment manufacturers to engineering research

If you think of your body in engineering terms, you can begin to see why it is such an amazing engineering system. You can also see why engineers should become involved in "medicine" and hence why biomedical engineering is a rapidly growing discipline.

Some thoughts about your body in point form;

- self propelled with self contained portable power source.
- carries a reserve of fuel for propulsion and heating/cooling system.
- accepts a wide variety of fuel input which is converted in a complex chemical engineering process plant without powerful chemicals (like concentrated sulphuric acid).
- a propulsion system that has continuous variable gearing which allows maximum power output at various speeds and ranges of speed.
- a propulsion system that is lubricated for life (usually) in sealed joints. The joints have a dynamic coefficient of about 0.001—about 1/10 of skating on ice: that's why a marathon runner's knees don't get red hot!

- an elaborate system for navigation and communication, including

- a 3D camera/range finder with automatic washer and wiper on the lens, and signal preprocessor before information is forwarded to the brain.

- a sound sensor on-line to the brain (you can select certain noises to listen to or delete), associated with the balance function (many parts of the body are multi-functional). The movement of the ear drum is about 10-11 mm, less than the diameter of a hydrogen atom!

- other sensory systems - tactile, smell (your nose heats/cooling air to/from the lungs but is also the front end of an incredibly fast chemical analysis system).

- your body is controlled by a computer more compact and sophisticated than man made equivalents, that performs multi-tasking with ease, add to this data processors, control microprocessors, and memory, and imagination capability.

- of course, the whole body is covered in shrink wrap, and has an elaborate self repair mechanism.

These are a few examples of describing the body in engineering terms. All disciplines of engineering are involved. There are so many ingenious design features that engineers have a lot to learn, but can also help improve the understanding of how the body works, and becomes "ill".

A thought to finish on. At an average of 75 beats per minute for 75 years, your heart will pump about 3 billion times. Given that performance specification what would an engineering design look like?

CANADIAN REGISTRATION NEWS

by Nigel Shrive

The CEAB (Canadian Engineering Accreditation Board) now recognises accredited degrees from the Republic of Ireland. Assessment of the accreditation procedures of British degrees is now underway, with visits occurring on both sides of the Atlantic. Once the CEAB is satisfied that degrees accredited in certain Institutions meet Canadian requirements and vice-versa, then cross recognition of academic standing will occur.

At that stage, APEGGA will probably accept the CEAB recommendations to acknowledge the academic standard of those degrees. In the current situation, APEGGA is aware of the sensitivity of accepting a degree from Trinity College Dublin, but not one from Cambridge. We should be sympathetic to their dilemma and understand the reluctance to accept Irish degrees before accepting British degrees. Simultaneous recognition will be the probable result.

While recognition of degrees as acceptable academic standing is a step in the right direction, we will continue to push for recognition of membership of one of our sponsoring Institutions also as suitable academic standing. The examination route is just as valid a qualification. However, I doubt membership recognition can be achieved until there is some comfort with the degree issue.

YOUR LOCAL REPRESENTATIVES

The Committee Members whose names you will find at the top of the 'Events' sheet are your local representatives for dealing with the Institutions in London. They will also liaise with APEGGA in matters relating to professional dealings with our members.

This Group is funded by a portion of the fees that you send to London.

FROM THE EDITOR

We plan to publish this newsletter twice a year, to be sent to all members of the sponsoring institutions listed as resident in Alberta. If you have any comments regarding content, or indeed wish to contribute an article, please call.

Martin Gough

(work. 244 8844 facsimile: 244 5894)

SCHEDULE OF TECHNICAL/SOCIAL EVENTS — 1992/93

Contacts	Name	Bus.	Res.	Facsimile
Chairman	Pia Lin Li	264 2286	288 5626	288 5557
Vice Chairman	David Hood	298 5710	—	298 3891
Past Chairman	Alistair Limpitlaw	278 7176	278 8408	245 0440
Secretary	Mike Milligan	278 4852	291 3070	265 0349
Treasurer	Bob Owens	—	938 3469	—

Friday May 29, 1992 at 7:30 pm (Technical/Social)

Danish Canadian Club—Refreshments and Cash Bar

Speaker: Ron Girardau

Video: 'Opening of Goodwood Racecourse'

Video: 'Channel Tunnel'-most recent video

Sunday July 5, 1992 at 6:00 pm (Social)

Silver Springs Golf Club

Speaker: Hon. H. K. Cheng OBE

(This event held in conjunction with the Canadian Society of Civil Engineers)

Friday September 18, 1992 at 7:30 pm (Technical/Social)

Danish Canadian Club—Refreshments and Cash Bar

Speaker: Bob Benson

Video: 'Hibernia Project'

Video: 'Segmental Suspended Bridge'

Friday November 6, 1992 at 6:00 pm

Danish Canadian Club—Refreshments and Cash Bar

Annual General Meeting

Followed by - at 7:30 pm (Technical/Social)

Speaker: Mike Milligan (Shell Canada Inc.)

Videos: Related To oil and gas development

Saturday January 23, 1993 at 7:30 pm

Danish Canadian Club—Trivoli Room

Annual Dinner

Mark Your Calendar

Your Support of These Events is Most Important!!!

COMPANIONS CORDIALLY INVITED