



The Western Canada Group of Chartered Engineers

Members of U.K Institutions of Civil, Mechanical, Electrical, Structural, and Building Service Engineers, B.C., Yukon, Washington & Alaska

NEWSLETTER of the WCGCE

Volume 03 - November 2014

Dear members of **Western Canada Group of Chartered Engineers**,



Yet another eventful and busy year is drawing to a close and WCGCE is planning for the year-end celebrations and the year-end business.

Our Annual General Meeting will take place on 28th January at the Royal Vancouver Yacht Club. We hope you can all attend. Dinner will follow. We are honoured to have Robin Silvester – the president of Port Metro Vancouver, with his wife Clare Waters as our guests.

Afterwards, Robin will deliver a short presentation to diners on the Port of Vancouver.

Last spring we mourned the loss of our valued committee member Richard (Dick) Perry – see below.

We have had a well attended and eclectic technical program this year with topics ranging from earthquakes to ecology and energy issues to building design.

We are delighted with our new venue for technical meetings - the Accent Inns on Boundary Road. It is easy to get to by car or transit from downtown, from the east, south, and from the North Shore by using the 1st Avenue exit from the Trans-Canada Highway. Parking is free and plentiful and Skytrain is just a few minutes walk away.

During November, your committee, in a special working session convened by Matthew Walton-Knight has been diligently working on re-evaluate its strategic objectives and vision. The service we provide to you, our members was reviewed, how these services can be improved and especially how they can be adapted to the needs of our newer “social media savvy” younger members. We would appreciate suggestions from our members directed to the secretary at www.wcgce.org/contact

Our compliments of the season to all. We look forward to meeting you in January 2015 at our Christmas/New Year dinner.

Andrzej Narwocki, C.Eng., MIET, PMP

Planned Future Activities 2014/2015

WCGCE SCHEDULE FOR TECHNICAL MEETINGS 2015

Date	Venue	Subject	Presenter
January 28th Wed 5:30 pm 7:00pm	Royal Vancouver Yacht Club	Annual General Meeting Dinner Port Metro Vancouver	Robin Silvester, president of P.M.V.
March 18 th Wed 7:00 pm	Accent Inns Burnaby	topic to be confirmed	
May 20 th Wed 7:00 pm	Accent Inns Burnaby	topic to be confirmed	Dr Michael Wrinch, Principal, Hedgehog Technologies Inc.

Technical meetings commence 7:00 pm, following 5:30pm Committee Meeting

Recent Activities 2014

September 14th 2014 - Dynamic Structures

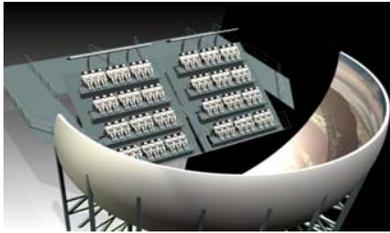
David Siu-Kau Lo M.A.Sc, P.Eng presented an overview of the design and construction of a theatre motion seating system developed by Dynamic structures and installed in the USA and China.

Using a conventional theatre layout for arrival and departure, the Motion Theatre transforms itself by



positioning guests vertically in front of a giant, state-of-the-art oblate spheroidal screen. After taking their seats, riders discover the floor has disappeared. While suspended in air, they suddenly they find themselves

leaping from the stratosphere and hang-gliding over Rio De Janeiro. When flavored with 3rd party theming, media and story, the immersive effect translates into an unforgettable viewing experience.



The Motion Theatre utilizes the latest in large-scale motion systems and projection developments to create the ultimate immersive video experience. Third generation immersive theatre effects are combined with sympathetic, programmable pitch and heave dynamics to thrill audience “riders”.

The talk discussed also the construction environment in China, how foreign contractors have to adjust to considerably less stringent safety and procurement practices in comparison to north America and Canada.

The Technical Meeting September 14 2014 was attended by approximately 48 members and guests of WCGCE, ASME and SEABC. Graphic material of the event is published on our website www.wcgce.org under “Past Events”.

November 18th 2014 - Renewable Energy and Energy Efficient Technologies - Opportunities & Challenges

Dr. Mehrzad Tabatabaian PhD, P.Eng. Program Head – Mechanical Engineering Tech. School of Energy – BCIT and Chairman of the Division of Energy Efficiency and Renewable Energy – (DEERE-APEGBC) presented.

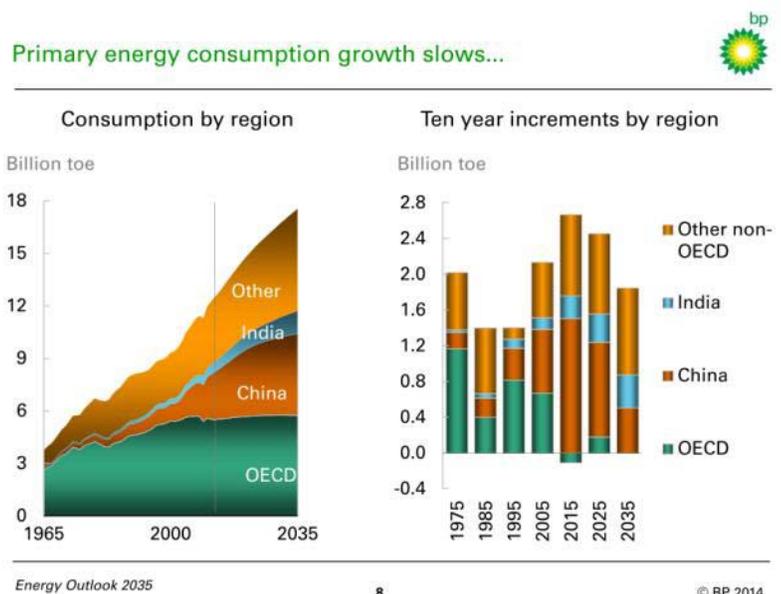
The need for alternative energy and technologies with emphasis on renewable energy sources with their effects on CO² emission reduction was explained. BP projects that global demand for energy in 2035 will rise by 41% – 95% of the growth is attributed to emerging economies. CO² emissions is expected to rise likely by 29%. It was pointed out that CO² equates greenhouse gas (GHG) accumulation, the single most critical factor of the climate change phenomena.

The audience learned about potential opportunities for engineering work and their contributions in the global energy sector.

Subjects included:

- o **Introduction to global energy status and statistics**, including BC and Canada. Historic data from ice cap spectral analysis covering approximately 4000 years indicate alarming rise of CO² emission since the 1960’s concurrent with global industrial activity. Reference literature: ‘BP Energy Outlook 2035’.

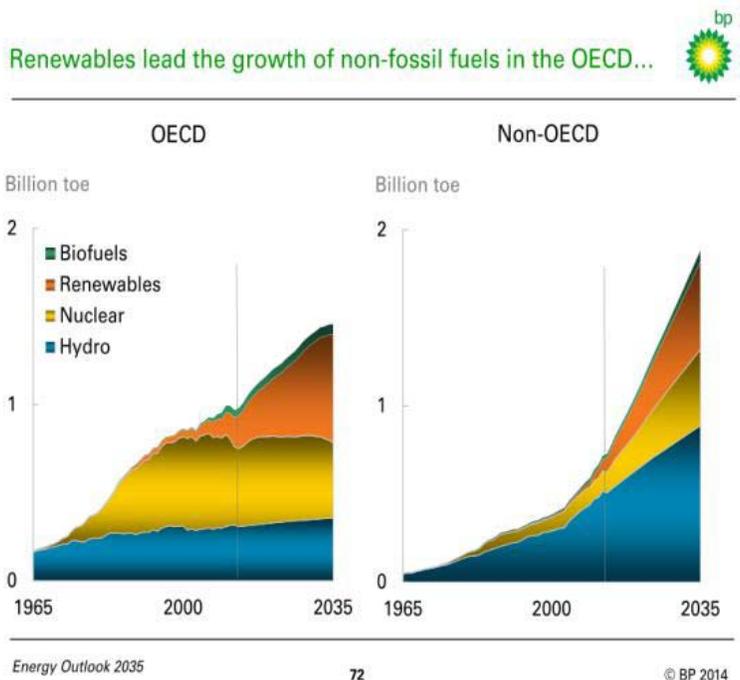
- o **Emissions to the atmosphere & CO² balance**; unit of measurement is ppm which directly relates to climate temperature rise. Consensus of IPCC (International Panel for



Climate Change) is 2⁰C safe threshold in average global temperature.

o **Constraints on the energy supply and demand;** diagrams illustrate the international distribution of energy demands and fossil resources like oil, gas and coal. Largest oil resources in the Middle East and largest demands from Asian countries. China is currently the main user of fossil fuel (coal and oil). Demand is expected to be overtaken by India by 2025. Strong growth in oil demands is expected after 2020 from middle east, Brazil, USA and Canada. Estimated coal reserves is 200 years at current demand rate.

o **Environmental concerns and energy issues:** Fossil fuels are still subsidised four times more by governments than alternatives.



o **Renewable energy sources and types:** solar, wind , tidal, hydro and nuclear power

o **Renewable energy status, roles and promises:**

Solar: global potential is 86,000 TW, while current energy demand is only 15TW. Solar cell efficiency is currently only 15-20%, with average installation cost \$2-\$4.50 / KW.

Wind: Some countries (Germany) are already resourcing wind at 50% of total energy demand. Canada has installed 217 wind turbines producing 8,517 MW or 3% of national demand. One turbine typically powers 500 homes. **Myth about wind turbines:** high rise buildings apparently kill more birds than wind turbines do – blades can be set to prevent bird-kill and noise pollution.

o **Scenarios for future energy technology portfolio:**

Ocean tidal energy harvesting currently least developed technology;

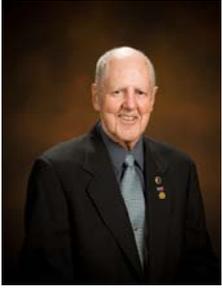
Micro-hydro harvesting from streams and rapids; Bio-mass and bio-fuel (ethanol) from crops and organic composting;

Green building science is developing fast: example I China of wind turbines incorporated in building profile.

o **DEERE:** Mehrzad Tatabaiaian volunteered to establishing a new division at APEGBC, Division for **Energy Efficiency and Renewable Energy (DEERE)**, offering several PD seminars for the APEGBC members on the subjects of wind power, solar power, renewable energy, and multiphysics modeling methods for engineers.

The Technical Meeting was attended by approximately 38 appreciative members and guests of WCGCE who contributed to a lively exchange of ideas and many interesting questions.

REMEMBERING RICHARD P. PERRY, P.ENG.



Early this year we lost our friend and colleague **Richard “Dick” Perry**. A Fellow of **CIBSE, IMechE, and ASHRAE**, Dick was a member of the Committee of the **Western Canada Group of Chartered Engineers (WCGCE)** for many years. During that time he actively participated in the activities of the group and held many positions within our organizations (Chairman, Vice-chairman and most recently Newsletter Editor).

Dick has had an eclectic and illustrious career.

He graduated from Wanganui Collegiate in New Zealand in 1941 and immediately joined the Royal New Zealand Air Force, training as a pilot to become a veteran of many heavy bomber missions over Germany in WWII. He continued to fly as a private pilot until a few short months before his death.



In 1946, after returning from overseas, he joined the firm of Andersons Ltd. in Christchurch, New Zealand, designing machinery for the Dairy Industry. During this period he obtained membership with the Institution of Mechanical Engineers in Great Britain. He and his family moved to Canada in 1952. Here he started as a designer with the D.W. Thomson Ltd.

From 1952 to 1964, Dick was involved in the design of heating systems for a wide variety of projects that involved using coal and steam as the heating medium, later moving to hot water, oil firing and natural gas. There the many projects he worked on included **Prince George and District Regional Hospital, Maple Ridge Hospital, Bank of Canada Building, The Capilano Winter Club** (first Vancouver’s indoor skating and curling rink using waste heat to heat up the swimming pool),

In 1964, Dick formed the company Perry Engineering Ltd., with a contract to design mechanical systems for the new **Vancouver International Airport**. He also joined the firm of **Phillips Barratt & Partners** (the Principal Consultants for the airport project), as Partner and Senior Mechanical Engineer. During the period 1964 to 1974, he designed mechanical systems for a wide variety of commercial, residential and industrial buildings. The major projects, in addition to the Vancouver International Airport, included **Canadian Airlines Maintenance Base, Air Canada Maintenance Hangar Complex and Air Cargo Building, Kamloops Pulp and Paper, Paper Mill, Department Stores for Hudson’s Bay Co., Meat Processing Plants for Canada Packers** and many more.

Over the years he continued to build up the Mechanical Engineering Department and when he left the firm in 1974, this department had a staff of 75 Engineers and Draftsmen working on many multi-million dollar projects.

In 1974, Dick developed a computer program for the hydraulic design of sprinkler systems. The contractor who financed the work, Bur-Mar Mechanical, practically cornered the sprinkler system installation market using this program, during the years 1974 to 1980.

In 1974 he sold his interest in Phillips Barratt & Partners in order to devote more of his time to work as a member of **the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)**. He joined the Society in 1952. Many years later (1982/1983) he became the ASHRAE President. In 2011, the Society awarded him the highest ASHRAE's award, the F. Paul Anderson Award, which reads "***This Award is given for notable industrial achievement and exceptional leadership in the HVAC&R industry, for contributions to ASHRAE and for outstanding service to the Society***".

As the ASHRAE Vice President and President, Dick visited chapters in 13 countries around the world, chartered the first two chapters outside of the US and Canada, (Singapore and Hong Kong) and visited Chapters in 49 of the United States and all of the Chapters across Canada.

In 1985, he negotiated a \$750,000 contract with the Federal Government, Energy, Mines and Resources Department, to provide energy audits for commercial, industrial and residential buildings throughout British Columbia. He had three teams working on energy audits and recommended energy saving measures for more than 1500 companies. The energy analysis work was done using the modified Meriwether program.

In 1996 Dick became a member of the U.S. Green Building Council and during the next three years he analyzed and recommended several hotels for awards under the LEED Green Building Rating System. The largest project was the **Kandalama Hotel** in Sri Lanka, a U.S. Green Building Council Pilot Project. A Green Building analysis was carried out for the City of Vancouver on the 48-storey **ONE Wall CENTRE** in Downtown Vancouver to determine its rating under the LEED System.

As a member of the Committee of the WCGCE I had privilege to work with Dick for many years and admired his intelligence, vitality and a great sense of humor. Dick will be greatly missed by all of us.

On behalf of the Committee of WCGCE,
Andrzej Nawrocki, C.Eng., MIET, PMP
Chairman WCGCE

I would like to thank Craig Perry for providing details about Richard Perry's professional achievements.

Next Edition

The next edition of NEWSLETTER is scheduled for early May, reporting on the events of the first quarter. An up to date schedule of events is always available at our web site www.wcgce.org

Editorial

The NEWSLETTER is compiled and edited by George De Ridder (Hon. Secretary) and Chris Richardson serving the executive Committee of the Western Canada Group of Chartered Engineers. Communication about this edition can be directed to www.wcgce.org/contact