



The Canadian Society for Civil Engineering
The Canadian Geotechnical Society



London District Section

2007 / 2008 Program

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**2007 / 2008
PROGRAM**

WEDNESDAY OCTOBER 17TH, 2007

**ENGINEERING AT GENERAL
DYNAMICS LAND SYSTEMS**
DOUGLAS E. MACKAY, GENERAL
DYNAMICS LAND SYSTEMS - CANADA

WEDNESDAY NOVEMBER 21ST, 2007

**DETROIT RIVER INTERNATIONAL
CROSSING STUDY**
SPEAKERS TO BE ANNOUNCED, ONTARIO
MINISTRY OF TRANSPORTATION AND URS
CANADA INC.

WEDNESDAY JANUARY 16TH, 2008

**DEMAND FORECASTING & WATER
SYSTEM OPTIMIZATION – ST. JACOBS
& ELMIRA**
ANDRE POIRIER, DELCAN CORPORATION

WEDNESDAY FEBRUARY 20TH, 2008

**WINDTHROW: A GEOTECHNICAL
ENGINEER'S PERSPECTIVE**
TIM NEWSON, UNIVERSITY OF WESTERN
ONTARIO

WEDNESDAY MARCH 19TH, 2008

**THE BIG PIPE: YORK REGION'S 15
KM TRUNK SEWER EXPANSION**
SPEAKER TO BE ANNOUNCED, AECON
CONSTRUCTORS

WEDNESDAY APRIL 16TH, 2008

**ADAPTIVE REUSE: ITS APPLICATION
TO THE CONSERVATION OF LONDON'S
HERITAGE**
DON MENARD, CITY OF LONDON
SEE FOLLOWING PAGE FOR DETAILS.

Notes About All Meetings

- Meetings will be held on Wednesday evenings.
- Location: Elephant & Castle Restaurant, located at King St. and Wellington St. (Galleria Mall). Free Parking in Galleria lot.
- Cash bar is available.
- Networking opportunity commences at 5:45 p.m.
- Dining at 6:30 p.m.
- Presentation at 7:15 p.m., followed by Q & A.

GREAT PRICES!

Pricing to attend an individual meeting:

- **Student** **\$ 10**
- **CSCE / CGS Member** **\$ 15**
- **Non-Member** **\$ 20**

The Best Deal – a DINNER CARD!

Purchase a DINNER CARD – we'll give you one meal free!

Lets the cardholder attend all 6 events – just flash the card and you're in!

Same great price for members and non-members.

Completely transferable ... share it among friends, staff, etc.

Standard Dinner Card **\$ 70**

Student Dinner Card **\$ 50**

Cards can be purchased at the October meeting.

*Contact Elsie Mae Clements @ (519) 964-5900, ext. 6361
(email: clemente@gdls.com) for more details.*

Wednesday October 17th, 2007

Presenter: Douglas E. MacKay, P.Eng., MBA, General Dynamics Land Systems - Canada

Engineering at General Dynamics Land Systems

The centerpiece of the design effort at GDLS-C is the Light Armoured Vehicle (LAV), which has been developed over the past 30 years. To satisfy the requirements specified by our Customers, mission specific equipment and sub-systems are integrated into our base vehicle and transform it into various high performance variants, each designed to accomplish specific task. As an integral part of Engineering Design and Development at GDLS-C, Design Engineering has a highly qualified and experienced staff of just over 100 Engineers, Technologists and Technicians at the London facility, conducting research, design, analysis, testing and managing the technical development of the vehicle. This presentation will provide an overview of LAV vehicle design, show some new innovations in the field and share how and why a Civil Engineer would choose a career in the manufacturing sector.

Wednesday November 21st, 2007

Presenters: Speakers to be announced, Ontario Ministry of Transportation and URS Canada Inc.

Detroit River International Crossing Study

The Environmental Assessment (EA) phase of the Detroit River International Crossing (DRIC) study to improve traffic flow and trade movement at the Windsor-Detroit border is being undertaken by a partnership of the Ontario Ministry of Transportation, Transport Canada, the United States Federal Highway Administration, and the Michigan Department of Transportation. This partnership, through the DRIC study, is currently seeking a location for a new river crossing, plaza for border inspections, and access roads leading from Highway 401 in Canada to the Interstate Highway system in the U.S. This presentation will include a brief outline of the study including the economic importance of this international trade corridor to both Canada and the United States, a summary of studies completed in the EA, the development and evaluation of study alternatives as well as next steps in the study process.

Wednesday January 16th, 2008

Presenter: André Poirier, P. Eng, Delcan Corporation

Demand Forecasting & Water System Optimization – St. Jacobs & Elmira

With the implementation of the Delcan-DHV's OPIR[®] software, operators in the Region of Waterloo now have one of the most innovative tools for controlling the St. Jacobs and Elmira water system. OPIR[®] works off the Region's SCADA platform and uses robust statistical algorithms to forecast demands and reservoir levels for the next 48 hours. OPIR[®] then sets production and pumping rates to make optimal use of storage in dampening supply fluctuations – taking the guess-work out of it. OPIR[®] is adaptive or self-learning and continuously refines diurnal demand curves for each day of the week based on a moving 7-week window designed to capture the influence of the seasons. It also recognizes extraordinary and random events such as main breaks and heavy lawn watering.

Wednesday February 20th, 2008

Presenter: Tim Newson, Ph.D., University of Western Ontario.

Windthrow: A Geotechnical Engineer's Perspective

Windthrow is a natural phenomenon that involves the uprooting of trees by wind. Every year thousands of hectares of trees are blown over in forest and urban areas of Canada. This damage results in considerable loss of revenue and disrupts long-term forest management plans. Resistance to windthrow is a complex interaction between topography, climate, soil type and state, location of water table and the biomechanics of the tree and its root system. This presentation will discuss the interpretation of the pre and post failure behaviour of soil-root systems from the perspective of geotechnical engineering. Items of interest will include soil-root interface properties, complex multi-axial foundation loading, rates of loading and cyclic load degradation of soil stiffness, foundation failure modes, root growth and 'initial' soil states, and mini-pile group spacing and raking angles.

Wednesday March 19th, 2008

Presenter: Speaker to be announced, Aecon Constructors

The Big Pipe: York Region's 15 km Trunk Sewer Expansion

Considering the population of York Region is expected to increase from 750,000 in 2001 to 1.3 million by 2026, it is no wonder they call this massive \$800 million expansion of the sewer system the big pipe. The parallel trunk sewer line, built with 14 connecting links, will carry up to 740 million litres of raw sewage daily from communities across York and Durham to treatment facilities on Lake Ontario in Pickering. Because the pipes are large enough to drive a car through (2.85m to 3.5m in diameter), the sewer line is being built underground using tunneling equipment to avoid disruption to nearby roads and neighborhoods. Tunneling on this project is so specialized that pre-qualification proposals were invited from tunneling contractors all around the world. However, it found the expertise it needed right in its own backyard: a joint venture between McNally Construction and Aecon Constructors. This presentation will discuss the steps required to undertake such a large project and highlight some of the obstacles encountered during construction.

Wednesday April 16th, 2008 Presenter: Don Menard, Heritage Planner, City of London

Adaptive Reuse: Its Application to the Conservation of London's Heritage

Adaptive reuse has been defined as the process of adopting older structures for new purposes. It has become an important argument for those advocating for the conservation of many of our built heritage structures. While there are excellent examples of adaptive reuse in Ontario, two, in particular, the distillery district in Toronto and the new school of architecture in Cambridge (Galt) have drawn public attention to the potential of using former industrial sites for other purposes. London has buildings which reflect the concept of adaptive reuse and others will come to the public's attention. Among these are the former McCormick's Factory, the old Normal School, and the former Central Library. Is adaptive reuse the principle by which these parts of our heritage can remain in a viable format? If so, how can we ensure its application?