

News & Notes...

Special Holiday Luncheon with PEC Members Set for the 2nd Thursday in December (the 14th)...

Members of the Professional Engineers of Colorado (PEC) Denver Metro Chapter will be joining the Colorado Section ASCE for a special joint Holiday Luncheon meeting on Thursday, December 14, 2006 (note that this is the **second** Thursday of the month). PEC is the Colorado affiliate of the National Society of Professional Engineers (NSPE). The joint ASCE/PEC Holiday Luncheon will be at the Section's usual meeting location, the Holiday Inn Denver City Center at 15th and Glenarm.

Ken Wright, PE, prominent local civil engineer, will present a colored-slide presentation titled **Tipon: An Engineering Masterpiece of the Inca Empire**. This presentation will give an inside look at an ancient Andean site exemplifying first-class engineering. Be sure to bring your spouse and other friends to this entertaining and interesting presentation.

In presenting **Tipon: An Engineering Masterpiece of the Inca Empire**, Ken will highlight the geotechnical, structural, hydraulic, and hydrologic successes by the Inca civil engineers from A.D. 1200 to 1534. Ken will describe Inca engineering techniques that included conjunctive use of surface water and groundwater for irrigation and construction of aqueducts, drop structures, and canal systems that would meet modern standards. He will describe stabilization of a deep gully where the finest terraces in all Peru still exist. Tipon, located close to the provincial capital of Cusco, is easily accessible to the tourist and is a shining example of Inca civil engineering by Native Americans.

ASCE Press published *Tipon: An Engineering Masterpiece of the Inca Empire* in August 2006, and at the same time, the ASCE Board of Directors approved Tipon as an ASCE International Historic Civil Engineering Landmark, one of only 36 worldwide. The Peruvians are proud of the work of their ancestral civil engineers and have undertaken the publication of the Tipon ASCE Press book in Spanish.

The luncheon and lecture will be aimed at both practicing engineers and the variety of guests they may bring and will include extraordinary scenic, color photography from the ASCE Press book. Following the lecture, there will be a book signing.



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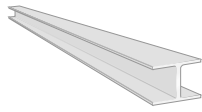
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Joint Structural & Transportation Group Meeting

Fred Rutz, PE, J. R. Harris & Co., will discuss **“When did structural engineering get its start?”** Fred believes those roots can be found in the truss bridges of the 19th Century. He will present an historical perspective of 19th Century bridges and discuss how structural engineering advanced along with bridge developments. Technological innovations of that era, current preservation issues, and findings from field testing on Colorado’s historic truss bridges—with some unexpected results—will be presented. Join us for **the colorful story of historic truss bridges.**

Geotechnical Group Meeting



David Kwietnewski, an engineer with Lyman Henn, Inc., will present a **case history of the construction of the Lake Pleasant Water Tunnel.** The tunnel was constructed as a part of the Lake Pleasant Water Line Project for the City of Phoenix, Arizona. The 1,700-ft. long tunnel was excavated through weathered and unweathered granite rock using both roadheader and drill-and-blast methods. Access to the tunnel was provided by a 60-ft. deep shaft at the western end and a portal with a 40-ft. decline at the eastern end. The tunnel was excavated from both ends simultaneously using a roadheader from the west shaft and the drill-and-blast from the east portal. A 78-in. inside diameter steel carrier pipe was installed inside the 10 ft. by 10 ft. excavated horseshoe shaped tunnel, and the annulus was backfilled with cellular concrete. Construction began in November 2005 and was completed in June 2006. David was the full-time on-site engineer during construction and will present photographs and a narrative of the various construction phases.

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– See Page 2 “News & Notes” for details.–



Water Resources & Environmental Group Meeting

Dr. Hussein Amery, Colorado School of Mines’ Division of Liberal Arts and International Studies, will discuss **Solutions to Middle East Water Problems.** He will begin by discussing how water affects economic development as well as war and peace in the Middle East. The water resources of the region are limited. Meanwhile, both population and water usage are increasing. This leads to growing tensions as well as opportunities for the countries in the region to cooperate and optimize the existing water resources. The development of shared water-courses (both surface water and groundwater), transboundary diversions, and equitable allocation of shared resources are some of the critical issues to resolve. For instance, Turkey has the ability to significantly reduce water flow into Iraq, much of the recharge area for a huge aquifer in Israel is located in the Palestinian Territories, and some aquifers have been over exploited to the point of being damaged. On the other hand, the Aqaba Project in Jordan could bring significant relief and benefits to Israel, Syria and the West Bank. Dr. Amery has first hand experience in the region, having grown up in Lebanon, and visits the region regularly. He has studied these water resource issues for 20 years and has advised parties to the peace process. The focus of Dr. Amery’s talk will be the proposed solutions to the water problems facing the region. More information on Dr Amery can be found at http://www.mines.edu/fs_home/hamery/. This presentation should be of interest to water resource engineers, planners, water rights practitioners and people interested in understanding the underlying issues in the Middle East. As Colorado faces water shortages in the future, there may be lessons to be learned and taught from both perspectives.

Upcoming 2007 Section Meetings:

- Thursday, January 18, 2007
- Thursday, February 15, 2007
- Thursday, March 15, 2007
- Thursday, April 19, 2007
- (Annual April Student Awards Night – Note: Date may change due to ASCE President-Elect’s travel schedule)
- Thursday, May 17, 2007

**GEO-volution:
The Evolution of Colorado's Geotechnical
and Geotechnical Engineering Practice**

The 2006 geotechnical seminar, a continuation of the biennial series presented by the Geotechnical Group of the Colorado Section ASCE, CAGE, AEG, and the ASCE Geo-Institute, will be presented on Friday, November 10, 2006, at the Sheraton Denver West Hotel located at 360 Union Boulevard in Lakewood. This year's theme was chosen to focus on Colorado's storied past, the difficult engineering challenges overcome by its early population, the current state of local geotechnical and geological engineering practice, and ideas that will carry our practice into the future. The presentations will provide perspectives on Colorado's unique geology, on geotechnical and geological engineering for the challenging ground conditions present in Colorado, on emerging trends in the local engineering practice, and on current solutions to Colorado's diverse geo-problems.

Registration, sponsor and exhibitor information is available via a link on the Section's website at <http://sections.asce.org/colorado/geotech.htm>. For more information contact Minal Parekh (mparekh@lymanhenn.com).

Younger Member Group

The YMG is busy with fall and winter activities! In October we visited a Haunted House and had monster burritos at our Happy Hour. We will have a Turkey Fry in November. Also, we will have a PE preparation presentation on Monday, December 4. We're continuing to tutor high school students with the Math Enrichment Program and provide supportive services for homeless and at-risk youth through Urban Peak.

If you're interested in any of the activities or want to learn more about the Colorado Younger Member Group, come to one of our happy hours on the second Thursday of each month or join us at our January Kick-off party. Please visit our web site at

www.ASCEcoloradoYMG.org

and click on the "Newsletter" tab for more information on current events.



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