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UD professor provides geotech education across the globe

8:23 a.m., April 20, 2009----Over the past eight years, Dov Leshchinsky, professor in the University of Delaware's Department of Civil and Environmental Engineering, has traveled the world teaching educators and practitioners about the design and use of geosynthetic reinforced soil, a construction material composed of sheets or grids of polymeric materials.

“The basic principle of geosynthetic reinforced soil,” Leshchinsky explains, “is that soils are strong under compression and geosynthetics are strong under tension. Combining the two renders a composite material that is strong under both conditions, enabling construction of earth-retaining structures, reinforced steep soil slopes, and embankments over soft soil. The resulting reinforced structures are durable, simple to construct, and cost effective.”

A pioneer and world-renowned expert in these emerging construction materials, Leshchinsky has become a “crusader” for continuing education in this area. “Continuing education is the most efficient way to disseminate information to practicing engineers responsibly and rigorously,” he says.

Leshchinsky has been teaching three-day courses on the subject through the UD College of Engineering's Outreach Program for more than a decade. The courses have attracted engineers from all over the U.S. as well as from Europe and Latin America.

Based on the impact of the Outreach courses, Leshchinsky began receiving personal invitations from organizations throughout the world, including private industry and government agencies, to offer an abbreviated version of the UD course, typically in a one-day format.

Since 2000, he has visited universities, departments of transportation (DOTs), and professional and trade organizations in 17 countries, including developing nations such as Thailand, Peru, Guatemala, and Malaysia. In the U.S., he has offered courses to employees of the Federal Highway Administration as well as DOTs in Georgia, Kansas, Maryland, Nebraska, Nevada, Oregon, South Carolina, and Washington. About 1,500 engineers have attended more than 40 courses.

Leshchinsky teaches the courses free of charge, receiving interesting local tours from his international hosts in lieu of payment. In March, he taught a class in Ho Chi Minh City, formerly known as Saigon. After the course, his Vietnamese hosts took him to the Cu Chi Tunnels, which are located about 40 miles northwest of Ho Chi Minh City.

Leshchinsky explains that the tunnels were originally constructed during French colonialism, and they were lengthened during what is known in Vietnam as the American War to connect villages, providing an underground “highway” for the Viet Cong guerrillas. A national park has since been established there to commemorate the war.

“On the ground, one can see large craters created by bombs dropped from B-52s and dense forests of young trees growing to replace the ones destroyed by Agent Orange,” he says. “It doesn't matter if the site is authentic, or just a replica; one leaves this place somber.”

To his surprise, Leshchinsky was approached by a group of young Vietnamese training for the military who asked to have their picture taken with him. “They're extremely friendly people,” he says. “When I asked whether they bore any resentment to Americans, they responded that the past is the past and they are now concerned about their present and their future.”

Dov Leshchinsky, at right, professor of civil and environmental engineering, makes a presentation in Vietnam.

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The Academy Building
105 East Main Street
University of Delaware
Newark, DE 19716 • USA
Phone: (302) 831-2792
email: ud-ocm@udel.edu
www.udel.edu/ocm

In addition to teaching, Leshchinsky is frequently called as an expert witness. In 2005, he spent nearly three days in the Supreme Court in New South Wales, Australia, on a case concerning failure of the third parallel runway in Sydney Airport. The judge accepted Leshchinsky's opinion, and an appeal by the plaintiff was dismissed in October 2008.

“To me, this type of case underscores the importance of continuing education,” he says. “Proper design and installation are essential for geosynthetic structures to perform effectively.”

Article by Diane Kukich