

2005 University of Kentucky/Kentucky Geotechnical Engineering Group Distinguished Lecture

Dr. Gonzalo Castro
GEI Consultants



TOPIC: Static and Seismic Stability of Tailings Dams

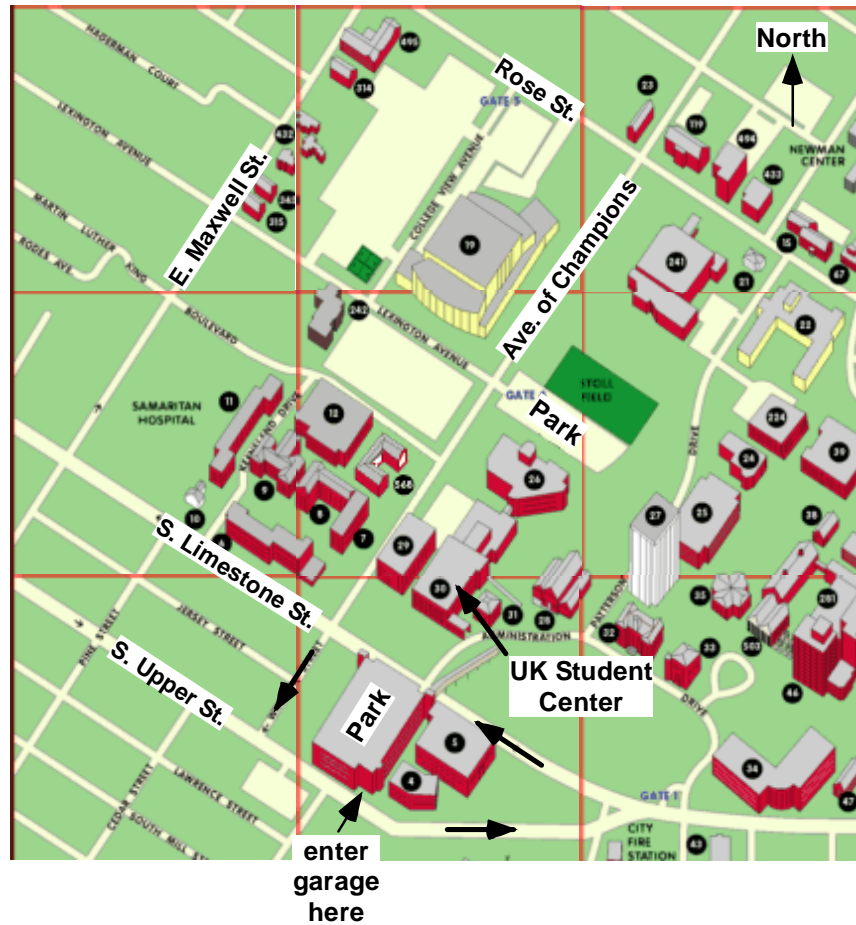
WHEN: December 6, 2005
Social Hour 5:30 - 6:30
Presentation 6:30 - 7:30

WHERE: UK Student Center Room 245 (see attached map)

ABSTRACT: Static and seismic stability failures have affected numerous tailings dams, leading, in some cases, to loss of life. The instability is often caused by the loose nature of the tailings and their undrained strength being substantially lower than their drained strength. This discussion focuses on the determination of the undrained strength of the tailings and their seismic response, particularly of the fine tailings that often comprise the bulk of the tailings impoundment and may control its stability. The fine tailings are often normally consolidated. Their peak undrained shear strength controls static stability. As a result of seismic shaking, the fine tailings may lose part of their peak undrained strength. The loss in peak strength is better related to the cyclic strains rather than to the pore pressure increases induced by the earthquake. Actually, the tailings may develop 100% pore pressure under seismic loading and not lose a significant part of their peak strength

About Dr. Castro: Gonzalo Castro received a Civil Engineering degree from the Catholic University of Chile in 1961, a Master of Science from George Washington University in 1963, and a Ph.D. in Engineering from Harvard University in 1969, where he performed research under Arthur Casagrande on the subject of liquefaction of sands. He joined GEI Consultants in 1971, and practiced extensively on the seismic safety of dams during his career. He was elected to the National Academy of Engineering in 2003 for his contributions to geotechnical earthquake engineering, soil dynamics, and the seismic safety of dams.

**DIRECTIONS TO 2005 UK/KGEG DISTINGUISHED LECTURE
UK STUDENT CENTER ROOM 245**



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