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Present a JOINT TUNNELING SEMINAR on **FRIDAY SEPT 21st**
at **NOON** in **BERTHOUD HALL 243** entitled:

Modern Tunneling for Cities - Principles and Case Histories

Urban tunneling occurs increasingly in settings characterized by dense infrastructure both above and underground. To minimize circulation lengths transportation tunnels are preferably built at shallow depths. This in turn results in tunneling in soft or mixed ground conditions and close proximity to the surface and existing structures. Conventional tunneling using sequential excavation methods (SEM) and shotcrete for early tunnel support is frequently the most suitable construction method in such conditions. At the same time and due to the advancement of mechanized tunneling, tunnel boring machines (TBMs) are frequently employed to tackle challenges of shallow cover. Utilization of a wide range of ground improvement techniques frequently facilitates urban tunneling under even most difficult conditions. The presentation lays out basic principles for urban tunneling and uses selected case histories from transportation projects in Washington, DC, New York City, Boston, Miami, London, UK, and Singapore to demonstrate modern tunneling applications in urban settings.



PRESENTATION BY:

Wojtech Gall, PhD, PE, *Principal of Gall Zeidler Consultants*

- Wojtech Gall has over twenty-five years of experience in the design, construction, and construction management of tunnels and underground structures. His expertise encompasses soft-ground, mixed-face, and rock-tunneling for transit structures in urban settings utilizing TBM, conventional tunneling (SEM/NATM), and cut-and-cover techniques frequently employing ground improvement measures to facilitate mined tunneling by means of grout injections, specialty fore-poling systems and ground freezing.