Micropile A-Walls- Industry Design and Construction Practice

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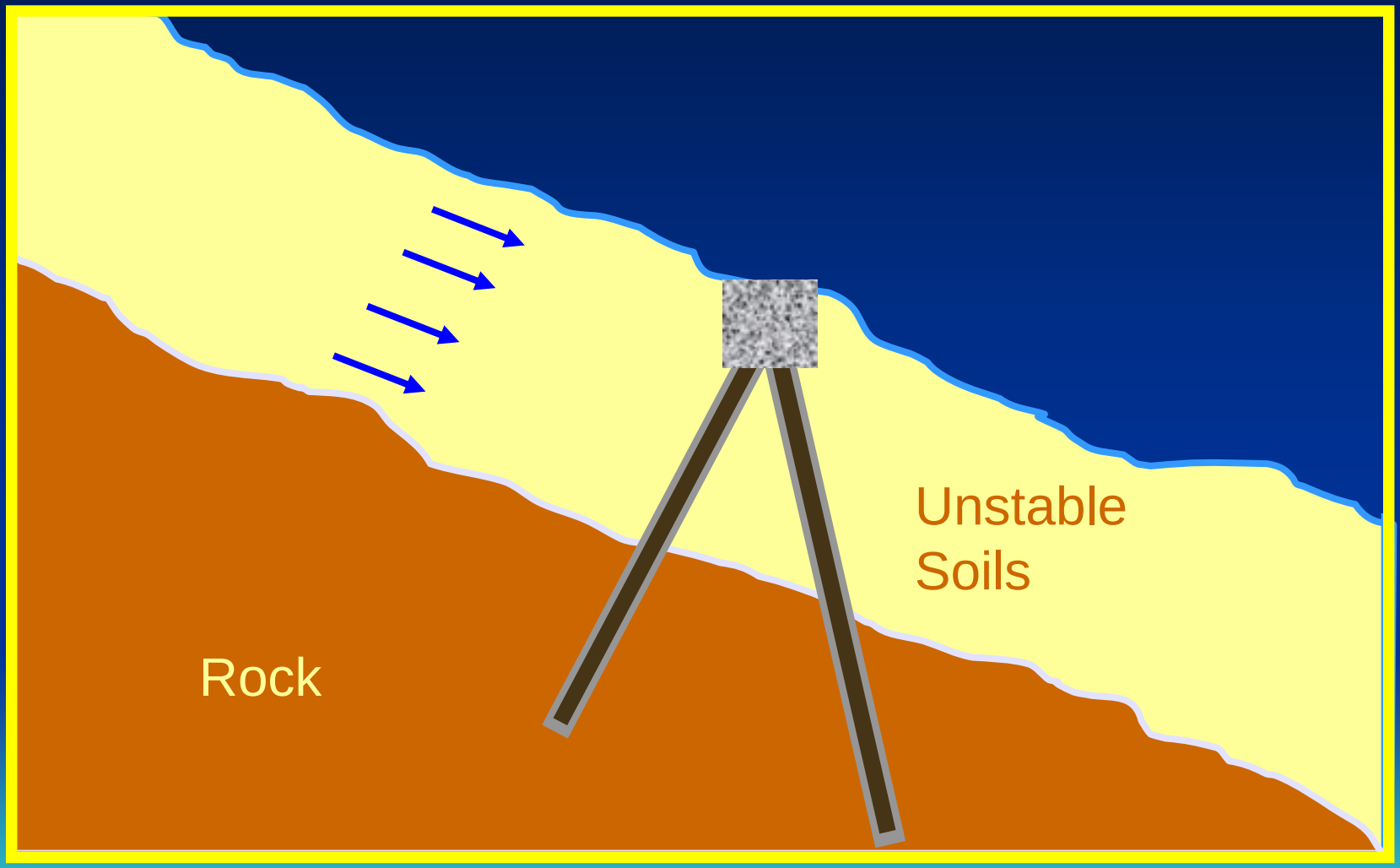
ISM 14th International Workshop for Micropiles

Panel Discussion

- Nadir Ansari, P.Eng., D.GE, Isherwood Geostructural Engineers, Canada
- Stephen Buttling, B.Eng, Ph.D, CPEng, RPEQ National Geotechnical Consultants, Australia
- Kenny Wilson, B.Eng, MIEAust, PCA Ground Engineering, Australia
- Steve Davidow, P.E., S.E., P.Eng., Quanta Subsurface, USA

A-Frame Analysis



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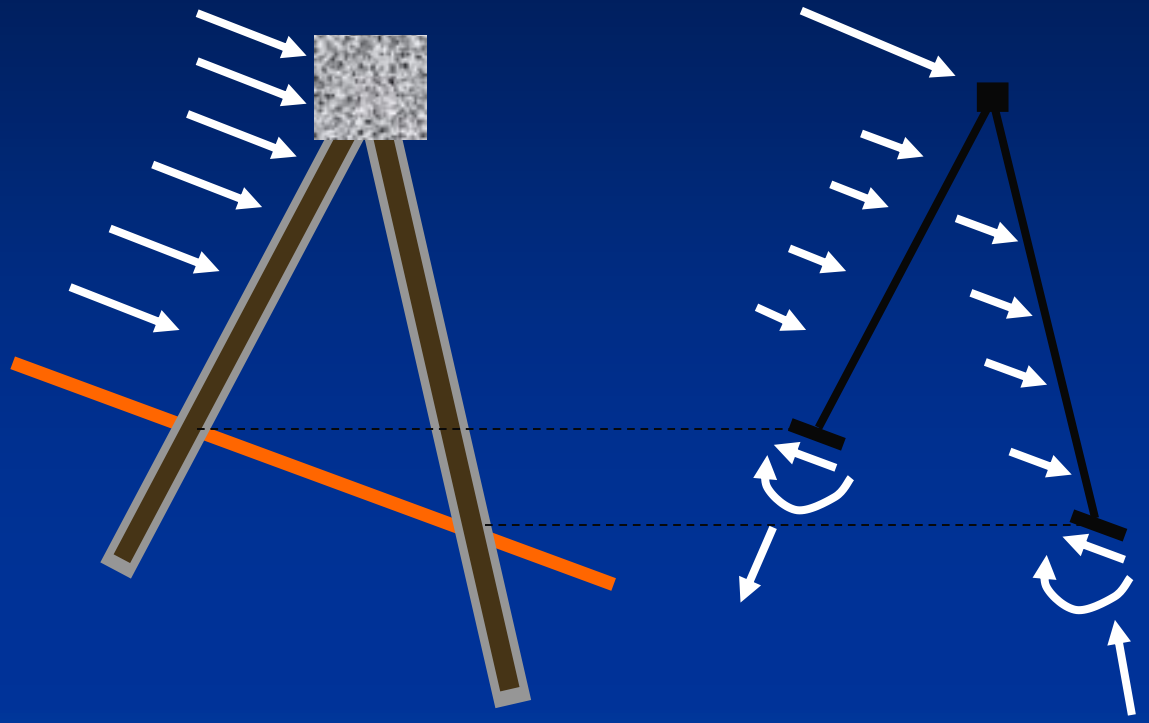
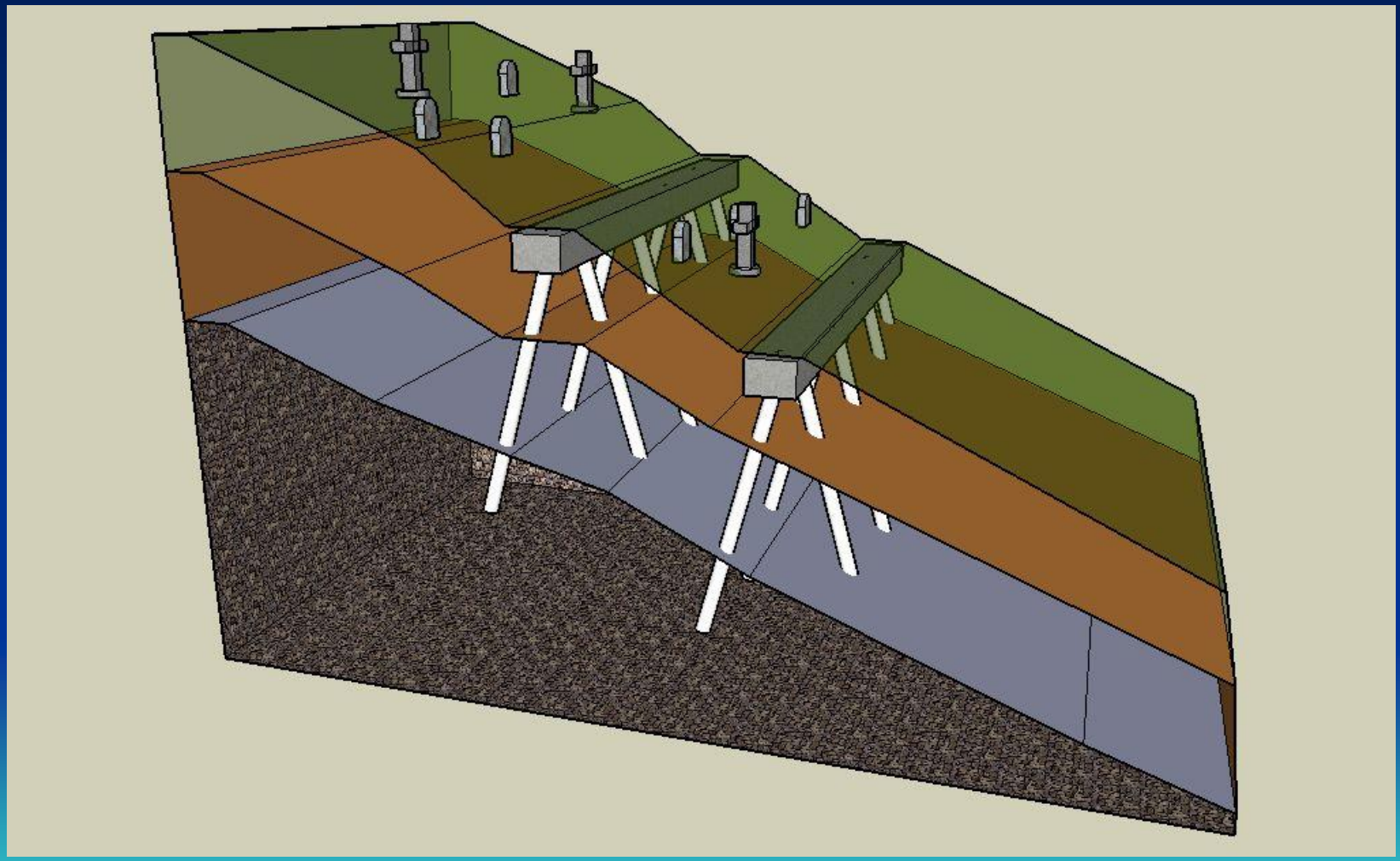


Typical A-Wall Scenario



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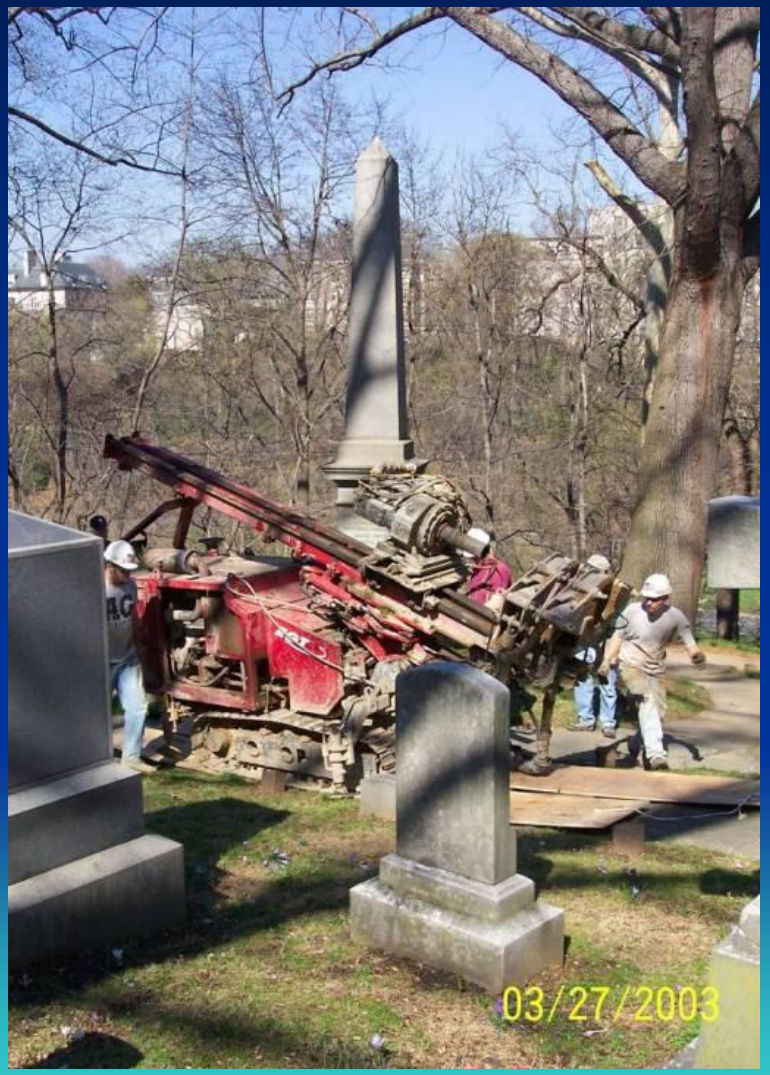

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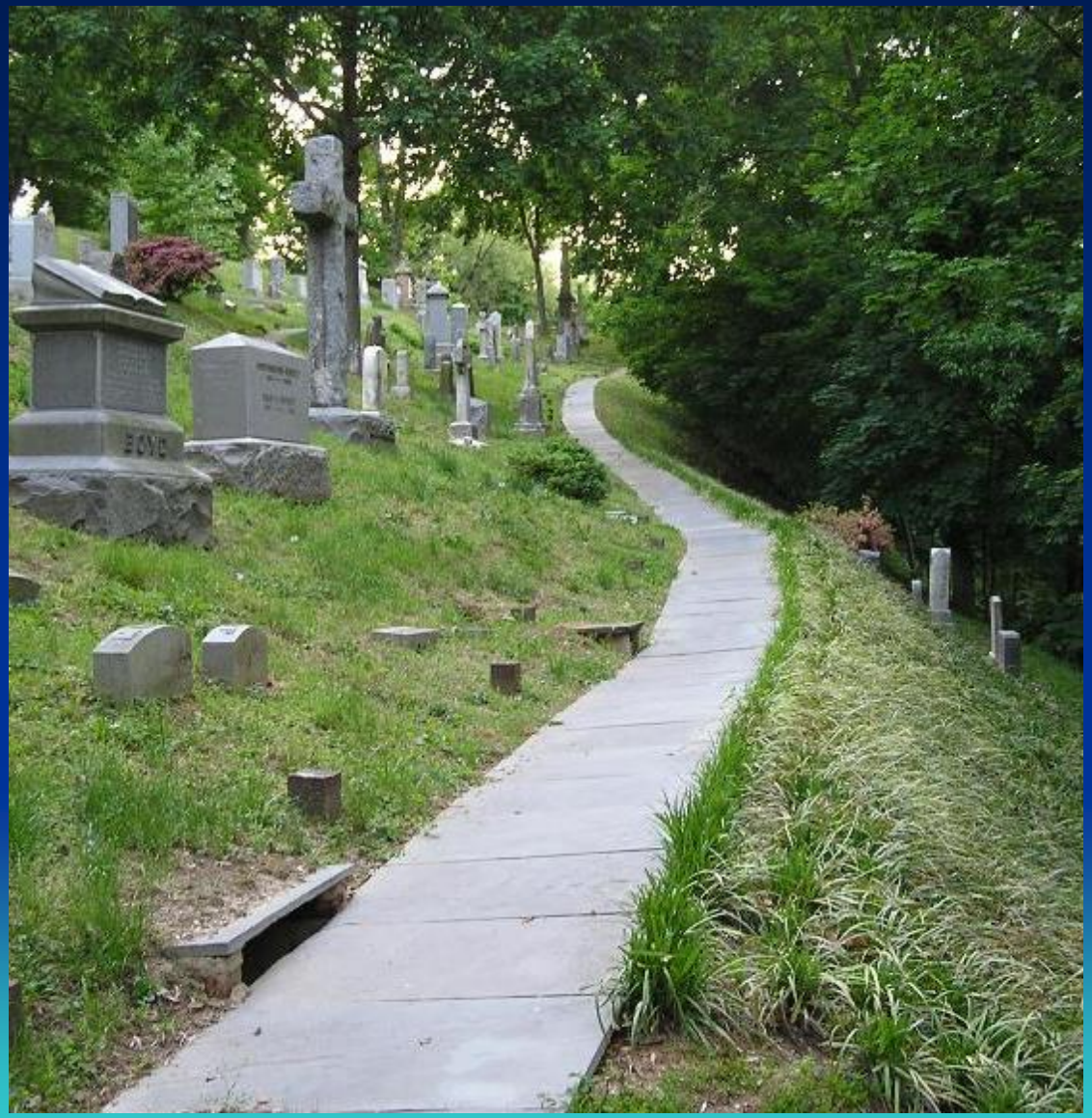

DFI Landslides Committee CPF

- Effect of Coupling on A-Walls for Slope Stabilization
- Andrew Boeckmann, J. Erik Loehr, Jesús Gómez, Helen Robinson, and Minh Uong

DFI Landslides Committee CPF

- Loehr and Brown (2008) developed a method for predicting the resisting forces in A-Walls for slope stabilization
- Based on results of full-scale field installations
- Experimental results using scaled micropile elements installed in large-scale physical models

Background

- Method satisfies compatibility between mobilization of axial and lateral load transfer
- Uncoupled lateral and axial analyses
- No consideration of interaction between upslope and downslope elements

Current Design Methods

- Current design methods for A-Walls require multiple steps
- By hand or using software
- Analyses are often performed considering the individual elements
- Assumptions must be made regarding interaction among connected elements
- Tedious, time consuming, numerous iterations

Project Scope

- Modification of University of Missouri computational modeling tool
- Select two instrumented case histories for evaluation
- Will analyze slopes stabilized with A-Walls according to Loehr and Brown (2008)
- Produce observations to improve efficiency of A-Wall designs

Final Report

- Summary of analyses performed
- Address significance of coupling
- Identify situations where coupling is most important

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