

Richard L. Handy, PhD,
is Distinguished Professor
Emeritus in the Department
of Civil and Construction
Engineering at Iowa State
University. In spite of his
efforts to remain incognito,
the author has been
recognized and is here
being congratulated
by a passerby.



Your presence is
requested at the

**Virginia ASCE
Geotechnical
Group**

Quarterly Meeting
on March 17,
2005

at

**Fredericksburg
Square**

525 Caroline
Street in

Fredericksburg

Beer and Wine Cash Bar at 5:30

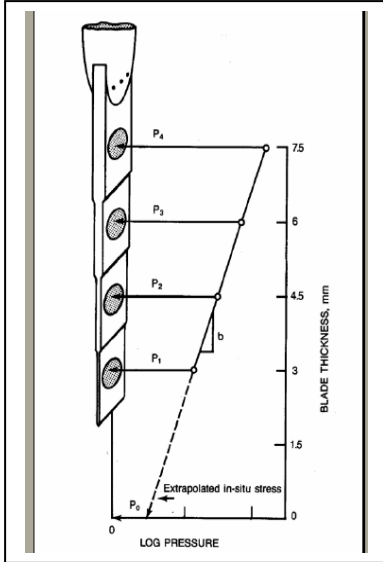
Dinner at 6:00

\$52 per person

We will provide you with all the ingredients for a fabulous evening: wonderful speaker, gourmet food, elegant surrounding, and superior company. The speaker shall be the incomparable Dr. Richard L. Handy, PhD. from Iowa State University, who will also be autographing his latest book. Dr. Handy's topic for the evening will be "**New Measurements attack Old Problems**". The menu will consist of your choice of Pan Seared Certified Angus Filet Mignon or Pecan Crusted Breast of Free Range Chicken. Both will be served along with a savory soup and delectable dessert with your choice of Baby Pineapple Upside Down Brown Butter Cake or Warm Forelle Pear Buckle. The ambiance of Fredericksburg Square is described as the "exclusiveness of a private club, the glamour of exquisite ballrooms . . .", but the enjoyment of conversation and comradery with fellow engineers is the greatest benefit of the evening.

Payment may be made by check or cash. All reservations must be honored. Substitutions are allowed. Dr. Handy's latest book, The Day the House Fell is available at \$24.

Please RSVP and reserve the book to Joan Carlton of IN-SITU Soil Testing, LC by email to joanmc7@comcast.net or by calling 703-473-5356.



A preview of Dr. Handy's talk follows:

Ideally a new measurement method can trigger some kind of breakthrough-- even though it can take a while to break through. Lateral in-situ stress is difficult to measure because inserting instrumentation or even boring a hole changes it. The K_0 Stepped Blade measures lateral stress in-situ by extrapolation from different controlled levels of disturbance, and has a demonstrated measurement precision that is as close as +/- 5%.

Rammed Aggregate Piers afford an excellent playground for lateral stress measurements because stresses are consistent and they are high.

Lateral stress measurements indicate radial tension cracking, which previously has been speculated to occur near driven pile because of rapid dissipation of excess pore water pressure. However, measurements closer to a rammed pier also indicate a highly efficient transfer of radial stress outward that is possible only if the *soil temporary becomes liquefied*. Other evidence is preservation of hoop stresses in the surrounding elastic zone as liquefied soil injects into open tension cracks.

Liquefaction can occur in saturated soils where the induced lateral stress exceeds the unconfined compressive strength. Liquefied soil solidifies to a higher density and a stress pattern that is consistent with plastic behavior.

These observations illustrate the vital role of measurements, and show how data can go a step beyond speculations and even finite element predictions.

Please forward this invitation to other engineers in your firm and copy me so that I may add them to our invitation master list. Thank you for this assistance. Joan Carlton