JANUARY 2003 MEETING

Wednesday January 15, 2003

TECHNICAL PROGRAM

ASCE Paper Presentation - "Recommended Practice for the Design of Residential Foundations."

Speakers: Michael Skoller, P.E. (Tel: 713-956-2094) presented the structural portion and David Eastwood, P.E., D.GE, DFE, C.A.P.M., F.ASCE (Tel: 713-699-4000) presented the geotechnical portion.

Mr. Skoller is president of National Structural Engineering, a Houston a firm that designs foundations for numerous residential buildings in the area. He is a licensed professional engineer and has a BSCE from Carnegie-Mellon University and an MBA from the University of Houston. He is an FPA member, a member of the FPA structural committee, past FPA president, and he currently serves as FPA treasurer. Mr. Skoller also served on the ASCE ad hoc committee that produced the paper being presented.

Mr. Eastwood is president of the Geotech Engineering and Testing, a Houston-based geotechnical engineering and testing company that works extensively in the Texas residential market. He is a licensed professional engineer and has BSCE and MSCE degrees from the University of Houston. He is an FPA member, a member of the FPA structural committee, past FPA president, and he currently serves as on the FPA board of directors. Mr. Eastwood also served on the ASCE ad hoc committee that produced the paper being presented.

PRESENTATION SUMMARY

The speakers presented the new paper recently sanctioned by the American Society of Civil Engineers to a room of about 40. A paper addressing the same subject was originally published in another form by the Texas State Board of Professional Engineers but was rescinded due to complaints by some engineers that said it should be developed by ASCE. A Texas Section ASCE committee was then formed, with meetings held around the state on a monthly basis. To see the FPA's official comments to the paper, click here.

Mr. Eastwood began the presentation, noting that the paper was not mandatory to follow. He pointed out some of the paper's recommended suggestions for geotechnical engineers when doing reports for residential projects:

- Expansive soil is recommended to be defined as having a plasticity index greater than 15% or swell greater than 1%.
- A site specific soil report is recommended on all residential jobs
- For a slab-on-piers project, minimum 2 borings at 20 ft depth are recommended.
- Slightly more lab testing is recommended, including hydrometer testing (to determine percent fines). Soil suction testing is also recommended.
- It is now recommended that the geotechnical engineer account for the trees on site.
- A site characterization is recommended, although the paper stopped short of recommending that site photos be taken.
- At least two methods are recommended to estimate soil movement.

Mr. Skoller gave the second half of the presentation. Some of the paper's structural recommendations that he presented were:

- If BRAB is used to design the foundation, then the foundation length may be limited to 50 ft.
- If WRI is used, the design foundation length should be multiplied by 1.5 with a minimum recommended length of 6 ft.
- If PTI is used, the minimum prestress is recommended to be increased from 50 psi to 100 psi.

- It is recommended that stiffener beams be used at all exterior and interior (re-entrant) corners.
- It is recommended that piers not be tied to the grade beams unless the foundation is designed for uplift (someone in the audience pointed out that uplift forces have been calculated by some geotechnical engineers to be on the order of 3000 PSF on past projects).
- It is recommended that the engineer of record check and certify the fill, slab make-up, site grading and drainage, concrete slump, concrete compressive strength, and tendon elongations.
- It is recommended to no longer use leveling sand just below the slab.

The paper took effect on the Texas ASCE website on 1 Jan 03. It can be purchased on the Texas ASCE's website at: http://www.texasce.org/ . Contrary to what was expected, the Texas State Board of Professional Engineers https://pels.texas.gov/ decided on 9 Jan 03 not to adopt the paper but rather to just provide links to the website of Texas ASCE (just the website, not the paper), and this on an even basis with links to other professional organizations so that it does not give the appearance they prefer one over the other.

For a summary of Mr. Eastwood's past FPA presentations, click one of the following:

June 2001 - State of Practice of Geotechnical Engineering Design of Custom Homes in the Houston Area between 1990 and 2001

PAST PRESENTATIONS (click here)