

Hisham T. Eid

Professor of Civil Engineering

Education:

Hisham Eid earned his Ph.D. (Geotechnical Engineering) in 1996 from the University of Illinois at Urbana-Champaign, USA. He had a M.Sc. (Geoenvironmental Engineering) from the same university. He also obtained a M.Sc. (Geotechnical Engineering) and a B.Sc. (Civil Engineering) from Cairo University, Egypt.



Appointments:

2011-Present: Professor, Qatar University, Qatar (on leave from Benha University, Egypt)
2002-2010: Associate Professor, Qatar University, Qatar (on leave from Benha University, Egypt)
1999-2002: Assistant Professor and then (2001) Associate Professor, Zagazig Univ., Benha Branch, Egypt.
Principal Geotechnical Engineering (part time), ECG Consulting office, Egypt.
1996-1998: Postdoctoral Research Associate, University of Illinois at Urbana Champaign, USA.

Honors and Awards:

- Supervisor of M.Sc. thesis awarded by Qatar University as the best in the academic year 2014-2015.
- Recipient of Qatar University Research Award (1st Place), 2011.
- Author of a paper listed in the Geoenvironmental Website as one of the best 10 papers published on the properties of municipal solid waste, 2003.
- Recipient of Thomas A. Middlebrooks Award of the American Society of Civil Engineers (ASCE) for authoring a paper judged worthy of special commendation for its merit as a contribution to geotechnical engineering, 1998.
- Author of three papers nominated by the ASCE for a national award, 1994, 1996 and 2001.
- Recipient of Ralph B. Peck Fellowship for outstanding performance at the graduate level in geotechnical engineering, University of Illinois, 1995.
- Recipient of Stanley D. Wilson Fellowship for outstanding graduate student in geotechnical engineering, University of Illinois, 1993.
- Member of the American Society of Civil Engineers, the International Geosynthetics Society, and the Egyptian Geotechnical Society.

Research:

Dr. Eid's geotechnical engineering research has been focused within four areas:

- 1) Shear strength measurement and behavior of soil, solid waste, and geosynthetics.
- 2) Stability of slopes.
- 3) Bearing capacity and settlement of shallow and deep foundations.
- 4) Soil structure interaction.

Field and laboratory testing, analysis of case histories, and physical and numerical modeling have been utilized in his research. He has authored and coauthored several high impact papers and served as a reviewer for many international geotechnical engineering journals and conferences. Results of his research have been published in well-known text and reference books (e.g., *Soil Mechanics in Engineering Practice* by Terzaghi, Peck and Mesri, *Advanced Soil Mechanics* by Das, *Soil Strength and Slope Stability* by Duncan and Wright, and *Slope Stability and Stabilization Methods* by Abramson, Lee, Sharma, and Boyce) and utilized by several geotechnical engineers all over the world.

Special Professional Contributions

- Principal developer of ASTM D 6467 of the American Society for Testing and Materials Annual Book of Standards “Standard Test Method for Torsional Ring Shear Test to Determine Drained Residual Shear Strength of Cohesive Soils”.
- Designer of a ring shear apparatus specimen container that has been used by several international companies and agencies (e.g., Woodward-Clyde Consultants, the Panama Canal Commission, and Humboldt Mfg. Co.).
- Developer of soil residual and fully-softened shear-strength correlations that have been extensively used in the academia and utilized by several international consulting firms and institutions (e.g., Golder Associates, Shannon and Wilson, Inc., Barr Engineering, US Army Corps of Engineers, and US Federal Highway Administration).
- Developer of a solid waste shear-strength correlation that is widely used and published in well known books (e.g., *Soil Strength and Slope Stability* by Duncan and Wright).
- Developer of stability charts that give the practicing engineers a reliable and fast method to analyze uniform and nonuniform slopes in soils with nonlinear failure envelopes.

Consultation:

Dr. Eid has been involved in major civil engineering projects in North America and the Middle East. Examples of such projects are:

- Analyses of the largest landfill failure in the history of the United States “Rumpke Sanitary Landfill”, Cincinnati, Ohio (for Ohio Environmental Protection Agency, Columbus, OH, USA).
- Investigation of the downstream failure in Cardinal Fly Ash Dam, Ohio (for American Electric Power, Columbus, OH, USA).
- Preparing the permit applications for Phase IIa of Toland Road Landfill, Los Angeles, CA (for EBA Wasetechnologies, Santa Rosa, CA, USA).
- Evaluation of seismic stability of Enid Dam in Northern Mississippi (for U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, USA).
- Prediction of the existing foundation behavior due to renovation of the 45-year-old terminal building of Cairo International Airport (for the Ministry of Aviation, Cairo, Egypt).
- Design and construction supervision of the foundations of oil tanks at the Mediterranean and Red sea Egyptian shores (for the Ministry of Petrol and Mineral Recourses, Cairo, Egypt).
- Controlling the quality of the abrasive Almandine Garnet material used for the maintenance of oil tanks (for Qatar Petroleum, Doha, Qatar)

He was also responsible of a plenty of other critical geotechnical investigations during his appointment at the University of Illinois, USA, Engineering Consultants Group (ECG), Egypt, and Qatar University, Qatar. Dr. Eid is a licensed consultant of Geotechnical Engineering since July, 2000.

Teaching:***Courses at Qatar University (100% responsibility)***

CVEN 230	Geotechnical Engineering (junior level, civil)
CVEN 330	Foundation Engineering I (junior level, civil)
CVEN 430	Foundation Engineering II (senior level, civil)
CVEN 431	Selected Topics in Geotechnical Engineering (senior level, civil)
CVEN 432	Engineering Geology and Rock Mechanics (senior level, civil)
CVEN 506	Advanced Geo-mechanics (postgraduate, civil)
ARCH 322	Geotechnical Engineering (service courses, architectural engineering)

Courses at Zagazig University (100% responsibility)

Soil Mechanics (3rd year, civil)

Foundation Engineering (4th year, civil)

Engineering Geology (1st year, civil)

Advanced Analysis of Shear Strength of Soils (postgraduate, civil)

Geo-environmental Engineering (postgraduate, civil)

Special Educational Contributions

- Developing the strategic plan and new curriculum (2009) of the civil engineering program at Qatar University.
- Representing the department of civil and architectural engineering in the Qatar University Senate (2006-2012).
- Developing the syllabus and contents of the “Geotechnical Engineering for Architects” and the “Advanced Geo-mechanics” courses, Qatar University.
- Revising “substantially” the four main Geotechnical Engineering courses of the civil engineering undergraduate program, Qatar University.

Selected Publications**Journal Papers**

Eid, H.T., Amarasinghe, R.S., Rabie, K.H., and Wijewickreme, D. (2015). “Residual shear strength of fine-grained soils and soil-solid interfaces at low effective normal stresses.” *Canadian Geotechnical Journal*, Vol. 52, No. 2, pp. 198-210.

Eid, H.T., and Shehada, A.A. (2015). “Estimating the elastic settlement of piled foundations on rock,” *International Journal of Geomechanics, ASCE*, Vol. 15, No. 3.

Eid, H.T. (2014). “Stability charts for uniform slopes in soils with nonlinear failure envelopes,” *Engineering Geology*, Vol. 168, pp. 38-45.

Wijewickreme, D., Amarasinghe, R., and **Eid, H.** (2014). “Macro-scale test device for assessing soil-solid interface friction under low effective normal stresses,” *Geotechnical Testing Journal, ASTM*, Vol. 37, No. 1, pp. 121-138.

Eid, H.T. (2013). “Bearing capacity and settlement of skirted shallow foundations on sand,” *International Journal of Geomechanics, ASCE*, Vol. 13, No. 5, pp. 645-652.

Eid, H.T., and Bani-Hani, K. (2012). “Settlement of Axially Loaded Piles Entirely Embedded in Rock – Analytical and Experimental Study,” *Geomechanics and Geoengineering*, Vol. 7, No. 2, pp. 139-148.

Eid, H.T. (2011). “Shear Strength of Geosynthetic Composite Systems for Design of Landfill Liner and Cover Slopes,” *Geotextiles and Geomembranes*, Vol. 29, No. 3, pp. 335-344.

Eid, H.T. (2010). “Two and three-dimensional analyses of translational slides in soils with nonlinear failure envelopes,” *Canadian Geotechnical Journal*, Vol. 47, No. 4, pp. 388-399.

Eid, H.T., Alansari, O.A., Odeh, A.M., Nasr, M.N., and Sadek, H.A. (2009). “Comparative Study on the Behavior of Square Foundations Resting on Confined Sand,” *Canadian Geotechnical Journal*, Vol. 46, No. 4, pp. 438-453.

Eid, H.T. (2007). “A Technique for Estimating Permeability of a Randomly Fractured Rock Mass,” *Acta Geotechnica International Journal*, Vol. 2, No. 2, pp. 97-102.

Eid, H.T., Elleboudy, A.M., Elmarsafawi, H.G., and Salama, A.G. (2006). “Stability Analysis and Charts for Slopes Susceptible to Translational Failure,” *Canadian Geotechnical Journal*, Vol. 43, No. 12, pp. 1374-1388.

Eid, H.T. (2006). “Factors Influencing Determination of Shale Classification Indices and Their Correlation to Mechanical Properties,” *Geotechnical and Geological Engineering Journal*, Vol. 24, No.

6, pp. 1695-1713.

- Eid, H.T.**, Stark, T.D., Evans, W.D., and Sherry, P. (2000). "Municipal Solid Waste Slope Failure I: Waste and Foundation Soil Properties," *Journal of Geotechnical and geoenvironmental Engineering*, ASCE, Vol. 126, No. 5, pp. 397-407.
- Stark, T.D., **Eid, H.T.**, Evans, W.D., and Sherry, P. (2000). "Municipal Solid Waste Slope Failure II: Stability Analyses," *Journal of Geotechnical and geoenvironmental Engineering*, ASCE, Vol. 126, No. 5, pp. 408-419.
- Eid, H.T.**, Stark, T.D., and Doerfler, C.K. (1999). "Effect of Shear Displacement Rate on Internal Shear Strength of a Reinforced Geosynthetic Clay liner," *Geosynthetics International Journal*, Vol. 6, No. 3, pp. 219-239.
- Stark, T.D., and **Eid, H.T.** (1998). "Performance of Three-Dimensional Slope Stability Method in Practice," *Journal of Geotechnical and geoenvironmental Engineering*, ASCE, Vol. 124, No. 11, pp. 1049-1060.
- Eid, H.T.** and Stark, T.D. (1997). "Shear Behavior of an Unreinforced Geosynthetic Clay liners," *Geosynthetics International Journal*, Vol. 4, No. 6, pp. 645-659.
- Stark, T.D., and **Eid, H.T.** (1997). "Slope Stability Analyses in Stiff Fissured Clays," *Journal of Geotechnical and geoenvironmental Engineering*, ASCE, Vol. 123, No. 4, pp. 335-343.
- Stark, T.D., and **Eid, H.T.** (1996). "Shear Behavior of Reinforced Geosynthetic Clay liners," *Geosynthetics International Journal*, Vol. 3, No. 6, pp. 771-786.
- Stark, T.D., Williamson, T.A., and **Eid, H.T.** (1996). "HDPE Geomembrane/Geotextile Interface Shear Strength," *Journal of Geotechnical Engineering*, ASCE, Vol. 122, No. 3, pp. 197- 203.
- Stark, T.D., and **Eid, H.T.** (1994). "Drained Residual Strength of Cohesive Soils," *Journal of Geotechnical Engineering*, ASCE, Vol. 120, No. 5, pp. 856-871.
- Stark, T.D., and **Eid, H.T.** (1993). "Modified Bromhead Ring Shear Apparatus," *Geotechnical Testing Journal*, ASTM, Vol. 16, No. 1, pp. 100-107.

Conference Papers

- Amarasinghe, R., Wijewickreme, D., and **Eid, H.T.** (2014). "Laboratory testing of full-scale pipes partially embedded in soil to study soil-pipe interaction of offshore seabed oil and gas pipelines –initial observations," *Proceedings of the 10th International Pipeline Conference (IPC2014)*, Calgary, Alberta, Canada.
- Eid, H.T.**, and Shehada, A.A. (2014). "Numerical study on settlement of piled foundations on homogenous rock," *Proceedings of the 8th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE14)*, Delft, the Netherlands, Vol. 1, pp. 669-673.
- Eid, H.T.**, and Shehada, A.A. (2013). "Estimating the elastic settlement of vertically loaded single piles in rock," *The 3rd International Conference on Civil Engineering and Building Materials (CEBM 2013)*, Hong Kong, also Published in the *Advanced Material Research Journal*, Vol. 831, pp. 307-313.
- Amarasinghe, R., Wijewickreme, D., and **Eid, H.T.** (2012). "Some observations on steel pipeline-sand interface shear strength under low effective normal stresses," *Proceedings of the 65th Canadian Geotechnical Conference (GeoManitoba 2012)*, Winnipeg, Canada.
- Eid, H.T.** (2011). "Geotechnical Considerations on the Design of Piled Rafts on Rock," *Proceedings of the 6th International Structural Engineering and Construction Conference (ISEC6)*, Zürich, pp. 653-658.
- Eid, H.T.** (2004). "Shear Strength for Locating Critical Slip Surface in Stiff Clay Slopes," *Proceedings of the 9th International Symposium on Landslides, Rio De Janeiro, Brazil*, Vol. 2, pp. 1037-1044.
- Eid, H.T.**, and Al-Ansari, O.M. (2004). "Large-scale Land Reclamation and Soil Improvement for a City Expansion," *Proceedings of the 5th International Conference on Case Histories in Geotechnical Engineering*, New York, USA.
- Eid, H.T.**, and Abdel-Ghaffar, M.E.M. (2003). "When Clay Secondary Consolidation Helps: Two Case Studies," *Proceedings of the 12th Asian Regional Conference on Soil Mechanics and Geotechnical*

Engineering, Singapore, pp. 155-158.

- Eid, H.T.** (2002). "Interactive Shear Strength Behavior of Landfill Composite Liner System Components," *Proceedings of the 7th Geosynthetics International Conference, Nice, France, pp. 587-590.*
- Eid, H.T.** (2001). "Correlation between Shale Index Properties Derived from Different Sample Preparation Procedures," *Proceedings of the 15th International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul, Turkey, Vol. 1, pp. 77-80.*
- Eid, H.T.** (2000). "A Technique for Back-Calculating the Postliquefaction Shear Strength of Sands," *Proceedings of the 4th International Geotechnical Engineering Conference, Cairo University, Egypt, pp. 389- 400.*
- Eid, H.T.** (2000). "The Role of Non-Uniform Hydration in Failure of Unreinforced Geosynthetic Clay Liner Slopes," *Proceedings of the 4th International Geotechnical Engineering Conference, Cairo University, Egypt, 401- 413.*
- Eid, H.T.,** and Stark, T.D. (1998). "Undrained Shear Strength from Cone Penetration Tests," *Proceedings of the 1st International Conference on Site Characterization (ISC'98), Atlanta, USA, Vol. 2, pp. 1021-1025.*
- Stark, T.D., and **Eid, H.T.** (1992). "Comparison of Field and Laboratory Residual Strengths," *Proceedings of ASCE Specialty Conference on Stability and Performance of Slope and Embankment-II, Berkeley, California, USA, Vol. 1, pp. 876-889.*