



GEOTECH ENGINEERING AND TESTING

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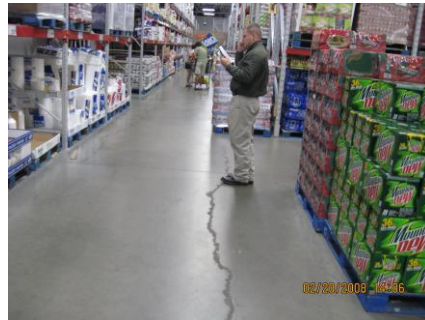
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STATEMENT OF QUALIFICATIONS FOR GEOFORENSIC ENGINEERING SERVICES



SERVICING

TEXAS, LOUISIANA, NEW MEXICO, OKLAHOMA

www.geotecheng.com

2024

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GEOTECH ENGINEERING AND TESTING COMPANY PROFILE

INTRODUCTION

The purpose of this document is to provide our client a complete package of our capabilities for geoforensic engineering projects. The information in this document can be used to put Geotech Engineering and Testing on your team to provide geoforensic engineering services. **We provide our services in Texas, Louisiana, New Mexico and Oklahoma.**



Geotech Engineering and Testing (GET) is a Texas owned, multi-disciplined organization of licensed engineers, geologists, field and laboratory technicians, and clerical personnel who combine their technical capabilities, past experience, dedication, and enthusiasm to offer the finest service through a combined team effort.

GET has a staff of about sixty (60) engineers, geologists, technicians, and support staff. The firm, which was established in 1985, provides the following services:

- o **Geoforensic Engineering**, *developing causations and remedial measures for distress in buildings, foundations, retaining walls, slopes, pavements, swimming pools, pipelines, tanks, turfs, floor slab covering and parking lots.*
- o **Geotechnical Engineering**, *including soil borings, laboratory testing, engineering analyses and recommendations regarding foundations, pavements, slope stability, retaining walls, ground improvement, construction considerations, etc.*
- o **Construction Materials Engineering**, *including earthwork, asphalt, steel, and concrete testing. In addition, the firm provides extensive non-destructive testing capabilities.*
- o **Environmental Engineering**, *including site assessments, monitor well installations, fault studies, and underground storage tank contamination studies.*

GET employees have provided services on a vast number of diverse projects. Our clientele ranges from individuals, builders, attorneys, insurance companies, public agencies, architectural/engineering companies, developers, to contractors. The primary purpose of the firm is to provide prompt, accurate and comprehensive geoforensic reports.

GEOFORENSIC ENGINEERING SERVICES

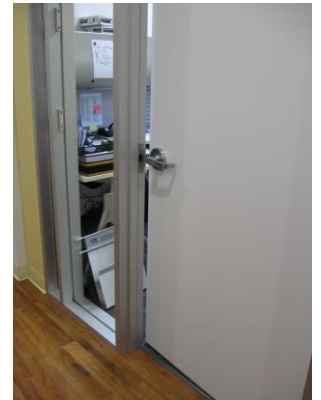
GET's staff specializes in developing causations for distress in buildings, foundations, retaining walls, slopes, swimming pools, pavements, tanks, roads, etc. In addition, we have performed sewer leak, pool leak, and drainage studies. Our firm is considered to be the leading firm in evaluation of the effects of trees on foundations. We take a multi-disciplinary approach toward solving geoforensic engineering problems in the most efficient and accurate way possible.



Our firm possesses specialized equipment and sampling devices that can obtain soil samples in areas with limited access. Furthermore, our firm has versatile instrumentation capabilities. GET's testing facilities can test distressed materials, evaluate the cause(s) of distress and develop proper repair techniques. GET's staff members have conducted many geoforensic engineering projects. Our staff members have served as expert witnesses and testified in court.

In summary, the Geotech Engineering and Testing geoforensic engineering services consist of the following:

- o Review of existing data and reports
- o Conduct field, laboratory and engineering analyses to find out the distress causation
- o Perform field instrumentation installation to monitor changes over a designated time span.
- o Conduct non-destructive testing.
- o Assess the risk of further distress.
- o Develop recommendations for repairs.
- o Develop cost estimates (damage model) for various repair techniques.
- o Develop construction repair documents.
- o Conduct construction management and quality control.
- o Provide expert witness services on the cases that litigation is taking place.



PROJECT TYPES

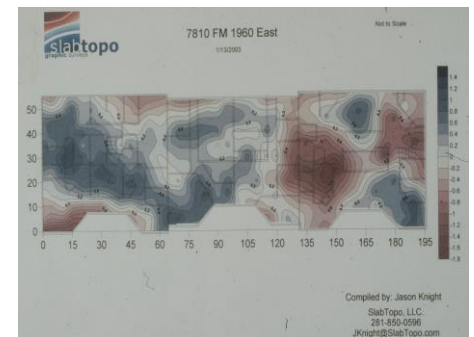
Geotech Engineering and Testing has been involved in the following types of projects:

Commercial: Shopping Centers, Industrial Buildings, Chain Stores, Office Buildings, Hospitals, Churches, Retaining Walls, Fast Food Restaurants, Turfs, etc.

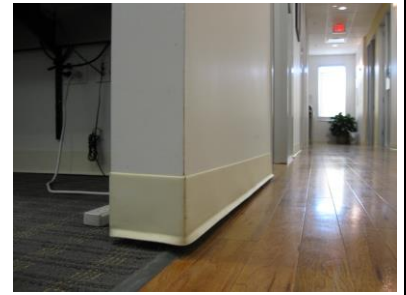
Residential: Residences, Subdivisions, Apartment Complexes, Swimming Pools, etc.

Public: Roads, Bridges, Schools, Libraries, Prisons, Underground Utilities, Retaining Walls, Pavement Repair, Slope Stabilization, Buildings, etc.

Industrial: Industrial Sites, Petrochemical Complexes, Pipelines, Towers, Marine Terminals, Sea Walls, Electrical Substations, Power Plants, Tank Farms, Flare Stacks, Machine Foundations, Bulkheads, Erosion Protection Systems, etc.



The above-mentioned facilities have various types of construction. For example, buildings may consist of tilt wall, concrete masonry units, or metal. The pavements and parking facilities consisted of concrete or asphaltic concrete paving. Each project was custom designed to fit the individual case requirements and satisfy the client's needs.



LEVELS OF INVESTIGATIONS

General

American Society of Civil Engineers, Texas Section, has established three levels of geoforensic engineering investigations. These levels are detailed and expanded herein. In general, the geoforensic engineer should recommend an appropriate level of investigation to provide an adequate analysis of the situation. The geoforensic engineer should visit the site and be the responsible-in-charge of the investigative activities. For the purpose



of aiding the client in determining the type of evaluation desired or actually performed, the following three levels of investigation are designated. These levels are from A to C. **Geotech Engineering and Testing's expertise is primarily in conducting a Level C investigation.** These levels of investigation are summarized in the following sections of this document.

Level A

This level of evaluation shall be clearly identified as a report of first impressions and shall not imply that any higher level of investigation has been performed. This level of investigation will typically include, but is not restricted to:



1. Interview the occupant, owner and client, if possible, regarding the history of the property and performance of the structure or pavements.
2. Request from the client and review the provided documents regarding the foundation, such as construction drawings, geotechnical reports, previous testing and inspection reports, and previous repair information.
3. Make visual observations during a physical walk-through.
4. Observe factors influencing the performance of the foundation.
5. If requested by the client, provide a written report containing at least the following:
 - a. Scope of services.
 - b. Observations, site characteristics, and data deemed pertinent by the engineer.
 - c. Discussion of major factors influencing foundation performance and rationale in reaching conclusions concerning the subject structure.
 - d. Conclusions and any recommendations for further investigation and remedial or preventative measures.

Level B

This level of investigation should include a written report including the items listed above for a Level A observation and also the following issues:

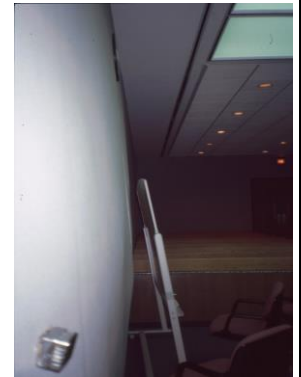
1. A determination of relative foundation elevations in sufficient detail to represent the shape of the foundation or floor adequately.
2. A drawing showing relative elevations.



Level C

This level of investigation includes the items listed above for Levels A and B observations and additional services, testing, and related reports deemed appropriate by the Engineer. **Geotech Engineering and Testing specializes in this level of investigations.** These may include, but are not limited to, the following:

1. Site specific soil sampling and testing.
2. Sewer plumbing testing.
3. Materials testing.
4. Steel reinforcing survey.
5. Post-tensioning cable testing, such as lift off testing.
6. Non-destructive testing such as Resistivity, or Ground Penetrating Radar (GPR), etc.
7. Review and comment on reports and drawing developed by others.
8. Test pit excavation and drilled footing exposure.
9. Scaled drawings.
10. Description of factors that affect soil moisture.
11. Observations of cut and fill.
12. Tree Survey.
13. Aerial photograph review.
14. Detailed distress survey.
15. Groundwater sampling and chemical testing.
16. Geologic fault study.



Geotech Engineering and Testing's expertise is primarily in conducting Level C investigations. We provide broad expertise in the applied earth sciences and material engineering to solve problems associated with earthwork construction, foundations, retaining walls, pavements and slope-stability.

Once the Level C is completed, we develop detailed recommendations on the following:

- o Various remedial measures.
- o Damage model.
- o Construction documents.
- o Cost estimates for various remedial measures.
- o Construction management and quality control.
- o Expert witness during trial on the cases where litigation is taking place.



TECHNICAL APPROACH

General

The foundation structural movements and distress observed at a project site can generally occur as a result of one, or a combination of the following factors: inadequate design, poor construction, poor quality materials, structure misuse, poor foundation/pavement maintenance program or structure age (wear and tear on the building). These items are described below:



Inadequate Design

Distress can occur if the foundation or structure is poorly designed. For example, if an inadequate geotechnical exploration was conducted to evaluate the foundation design parameters or faulty structural design procedures were utilized. Likewise, pavement distress can occur if the pavement is poorly designed. For example, if the paving was not designed for the proper traffic loading or faulty pavement design procedures were used.

Construction

Faulty construction techniques can result in foundation distress. For example, if the grade beams are smaller than the ones shown on the foundation drawings or piers were not belled or if the piers were placed at shallower depths than the design depths. Another example would be the steel in the floor slabs should be at the bottom of the concrete floor slabs instead of in the top one-third to reduce the floor slab temperature cracks. Faulty construction techniques can also result in pavement distress. For example, if the storm sewer was not properly backfilled, compacted, or the pavement was not constructed as thick as the design value. There are many other types of construction problems that can be cited.



Materials

Inappropriate materials can result in foundation and pavement distress. For example, if the concrete floor slabs do not have adequate strength, they have high slump, high water-cement ratio, dirty aggregates, then floor slab cracking may occur. Another example would consist of improper structural fill under the floor slabs, such as sands. The example of the pavement distress caused by faulty materials includes cases such as high water-cement ratio in the concrete or inappropriate grade of the steel reinforcements.



As a part of our investigation, we will evaluate the concrete detailed conditions, such as water-cement ratio (W/C), air content, amount of unhydrated cement particles (UCP), probable future performance, etc, utilizing the petrographic analysis technique.



Structure Misuse

Wrongful use of the pavement structure, such as excessive traffic loading on a paving with insufficient thickness can cause paving distress problems and result in early termination of the pavement usage. There are cases of misuse on other types of structures that we evaluate.

Maintenance

Environmental conditions, such as positive drainage away from the building and/or pavement structure, and on-site vegetation conditions, can play an important role in how the foundation and pavement perform. Negative drainage next to the grade beams and paving or ponding of the surface water can cause swelling of the underlying expansive soils, therefore, causing foundation and pavement distress. Trees placed in close proximity to the building and pavement structure can cause settlement and cracking.

Wear and Tear

Old buildings and pavements can experience distress as a result of aging. For example, sewer lines, water lines, plumbing, and/or sprinkler lines can start leaking, causing foundation movements. Furthermore, deteriorated joint sealants in the concrete paving can increase the possibility of water intrusion through the joints into the subgrade and induce the reduction of subgrade shear strength and cause heave in the case of expansive soils.

FIELD EXPLORATION EQUIPMENT

Drill Rigs. GET is one of only a few firms in Houston that has its own drill rigs. GET is equipped with eight drilling rigs, including a Simco and Failing Drilling Rigs, to perform wet rotary or hollow-stem borings. We also have four Lone Star, three portable rigs and two limited access buggy rigs. We can conduct drilling and sampling with our rigs up to 120-feet. In addition, together with our subcontractor drillers, we can drill to much deeper depths, install monitor wells, piezometers, and inclinometers. Our field crews have many years of experience in various subsoil and groundwater conditions. Our commitment to the client is to provide dependable service, the best and most up-to-date equipment, and reliable drilling personnel. GET has the capability and experience in surveying and staking the boring locations and providing clearance from underground utilities. In areas that are heavily wooded, we can arrange for clearing of the project site. We are one of the few firms in Houston with our own drilling rigs. The portable rigs are very useful on wooded or sites with soft subgrade conditions. These small rigs can go places where the larger rig cannot get to. Therefore, saving the client time and money.



GET is one of the few firms in Texas which is equipped with miniature portable rigs. These rigs are small enough that they can be maneuvered in a confined space or access hard to reach areas, such as inside buildings, houses, or on steep slopes, and sites that are wooded without significant clearing. Furthermore, since these rigs are portable, they can easily be placed on sites with wet subgrade soil conditions which create access problems.



Mules. We have two mules. We use these limited access vehicles to pull our portable rigs into muddy or wooded project sites. The drilling capabilities are the same as a portable rig by itself. However, this makes us able to access sites where a truck cannot.

GEOTECHNICAL/MATERIALS ENGINEERING LABORATORIES

Geotech Engineering and Testing's Laboratory has the capabilities to perform geoforensic testing under controlled conditions in order to evaluate not only standardized test of materials, but also tests of new materials used in research and development.



Our tests are conducted in general accordance with ASTM standards. Some of the geoforensic laboratory testing capabilities are as follows:

- o **Moisture content**
- o **Atterberg Limits**
- o **Gradation tests**
- o **Consolidation tests**
- o **Swell tests**
- o **Density tests**
- o **Organic Contents**
- o **Compaction**
- o **Other specialized tests**
- o **Soil suction**
- o **Permeability tests**
- o **Pinhole test**
- o **Torvane**
- o **Resistivity tests**
- o **Proctor tests**
- o **Hydrometer tests**
- o **Shear Strength**
- o **pH Tests**
- o **Unconfined Compression Test**
- o **Triaxial tests**
- o **Chemical tests**
- o **Hand Penetrometer**
- o **California Bearing Ratio**
- o **Bar Linear Shrinkage**
- o **Specific Gravity**
- o **Soil Classification**
- o **Resistivity Tests**

In addition to the above laboratory testing capabilities, our materials testing capabilities include the following:

- o **Concrete testing**, including but not limited to; slump, air, cylinders, beams, yield, coring, cement content, mix design verification, batch plant inspection and rebar inspection.
- o **Soil testing**, including but not limited to; densities, proctors, plasticity indices, gradations, -200's, cement and lime stabilization, and geotechnical testing.
- o **Asphalt testing**, including but not limited to; densities, cutback sampling, cores, theoretical specific and gravity, bulk density, gradation and extraction, mix design and stability.
- o **Structural steel**, including but not limited to; weld inspection, A325 Bolt torque, welder qualifications, magnetic particle inspections, ultrasonic, liquid penetrant, paint thickness, holiday testing and sandblasting inspection.



GET's laboratories have been approved by Harris County, City of Houston Quality Control, City of Houston Special Testing Department, Texas Department of Transportation, Metropolitan Transit Authority and Texas Department of Criminal Justice.



NON-DESTRUCTIVE GEOFORENSIC CAPABILITIES

Non-destructive testing is an important component of geoforensic engineering. Some of our non-destructive testing capabilities are as follows:

- **Rebar locating** - Non-destructive tests will be engaged in detecting the rebar/cable locations in the concrete floor slabs or paving. The instrument adopted to evaluate the rebar spacing and depths is the Profometer 4 Rebar Locator manufactured by PROCEQ Testing Instrument. In addition, GET has a **Ferro Scan** Device that can perform the same tasks of performance. Rebars in two different directions (x- and y- directions) are examined. We can obtain concrete cover thickness above the rebars and the distances between rebars.
- **Geophysical exploration** - This type of investigation consists of either Ground Penetrating Radar (GPR) or Resistivity Testing (RT). The geophysical exploration can be conducted if the results of our geotechnical exploration are non-conclusive. The geophysical exploration tends to give three-dimensional soil matrix stratigraphy and profile the underground moisture conditions.
- **Leak detection** - Leak detection tests verify the integrity of all water supply and sewer lines. These services are conducted by our plumbing subcontractors. These tests include the hydrostatic tests, video inspection, water supply pressure test, swimming pool line tests, smoke test, etc.
- **Floor slab/pavement thickness evaluation** - A non-destructive method will be utilized to verify the slab/pavement thickness. A concrete thickness gauge made by Olson Instruments, Inc. (Model Type: CTG-1) will be used to measure the thickness of the concrete slab/paving at various locations.



In addition to most of the above studies the pavement/parking studies will include:

- Concrete/Soil borings.
- Concrete testing, including compressive strength and petrographic analyses of the concrete.
- Pavement thickness measurements
- Groundwater measurements
- Rebar locating
- Pavement condition evaluation
- Concrete pavement joint survey
- Geophysical exploration.
- Traffic loading studies.



Project Team

GET is committed to providing the client with high quality geoforensic engineering services in a cost effective and efficient manner. Our staff members are very experienced and are qualified to perform these services.



The GET project team is headed by David Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE who is a licensed professional engineer in Texas, with over 48 years of experience in geoforensic, geotechnical, environmental and construction materials engineering services. He is responsible for the overall functions of the company. Mr. Eastwood is on the Post-Tensioning Institute's Slab-at-Grade Geotechnical Committee. Furthermore, he is the past president of Foundation Performance Association, an organization specializing in foundation failure evaluation. David Eastwood is the Past President of Houston Chapter of Texas Council for Engineering Laboratories. He helped with development of the geotechnical guidelines for design and construction for the City of Houston, Harris County, Harris County Flood Control District, etc. Mr. Eastwood conducts training in geoforensic, geotechnical, environmental and materials engineering for the City of Houston (COH), Harris County Engineering Department (HCEC), City of Sugar Land, American Institute of Architects (AIA), Associated Builders and Contractors (ABC), American Public Works Association (APWA) and Greater Houston Builders Association (GHBA). In addition, Mr. Eastwood has been certified as a Corrective Action Project Manager with the Texas Commission on Environmental Quality (TCEQ). Mr. Eastwood is the past President of the Academy of Distinguished Civil & Environmental Engineers at the University of Houston, Cullen College of Engineering. Mr. Eastwood is also a 2017 Member of Distinguished Alumni of College of Engineering at the University of Houston Cullen College of Engineering. Furthermore, Mr. Eastwood has been accepted as an Academy of Geo-Professionals (AGP) as a Diplomate, Geotechnical Engineer Fellow Member (D.GE). Mr. Eastwood is also a Board-Certified Geotechnical Engineer (BC.GE) by the American Society of Civil Engineers (ASCE). In addition, he has been accepted as an American Society of Civil Engineers (ASCE) Fellows Member. Furthermore, he is a Diplomate in Forensic Engineering (DFE) by Member of National Academy of Forensic Engineers (NAFE). Mr. Eastwood is also a Fellow with Post-Tensioning Institute (PTI).

Mr. Harry Nguyen, Ph.D., P.E., M.ASCE has 19 years of experience in geoforensic, geotechnical, environmental and construction materials engineering. He will be the Chief Engineer for geoforensic engineering services. Dr. Nguyen has worked on many geoforensic studies, including storage tanks, pools, slopes, pavement, foundations, turf construction, pipelines, etc.



Mr. James Namekar, Ph.D., P.E. has 25 years of experience in geotechnical, environmental and materials engineering. He will be the Chief Engineer for geotechnical and environmental engineering services.

Our construction materials testing services are headed by Mr. Fred Zandi, P.E. and has more than 41 years of experience in conducting materials engineering services, will be the project manager for the construction materials engineering team.



In addition, Mr. Mason Derakshandi, Ph.D., P.E., Mr. John Wang, Ph.D., Mr. Bruce Xia, Ph.D., Mr. Nikolas Darehshoori, M.S.C.E., Mr. Sonny Ehsaee, B.S.C.E., Mr. Leo Islam, M.S.C.E., Mr. Sam Shaik, M.S.C.E. and Mr. Allan Beheshti, M.S.E.M. collectively have many years of experience in geoforensic, geotechnical, environmental and materials engineering and will be a project manager for the engineering team.

Our field exploration will be headed by Mr. Blake Langley. Mr. Langley has been the manager of drilling services with GET for the past several years. He will handle all of the borings up to a depth of 120-ft. All of our boring's projects greater than 120-ft in depth will be drilled by our subcontractors. Resumes of some of our staff members are presented in Appendix A of this document.



EDUCATIONAL TRAINING

Geotech Engineering and Testing is the leader in technology transfer in the State of Texas. Mr. David A. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.FPA, F.ASCE, company president, trains many engineers in Texas and beyond on topics as follows:

Topic	Link (please click on)
Forensic Evaluation of Commercial Structures	Forensic Evaluation of Distressed Building Structures
Geoforensic Evaluation of City of Sugar Land Police/Court Building	Geoforensic Evaluation of City of Sugar Land Police Station/Court Building
Geoforensic Study of Storage Dome Collapse	Geoforensic Study of Storage Dome Collapse
Geoforensic Engineering Study of Asphalt Parking Facility near Hobby Airport in Houston	Geoforensic Engineering Study of Asphalt Parking Facility near Hobby Airport in Houston
Percent Fault Assignment in Geoforensic Engineering	Percent at Fault Assignment in Forensic Engineering
Geoforensic Evaluation of a School Project in South Houston	Geoforensic Evaluation of School Project in South Houston
Foundation Repair Techniques of Lightly Loaded Foundations	Foundation Repair Techniques of Lightly Loaded Foundations

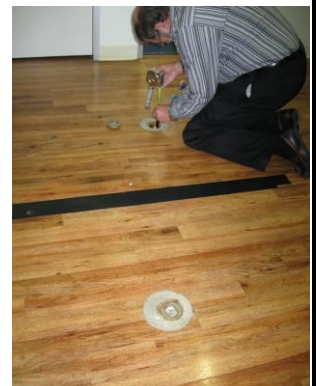
There are many more webinar topics on GET's [Youtube channel](#).

KNOWLEDGE/QUALIFICATIONS

GET's staff members have advanced degrees in engineering. Our staff members include:

- o Slope-Stability*
- o Settlement*
- o Sheet Pile Design*
- o Axially-Loaded Piles*
- o FPA Drilled Footings*
- o Wave Equation*
- o Seepage*
- o gINT*
- o PVR*
- o Laterally-Loaded Piles*
- o Pavement Design*
- o Pile Groups*
- o Volfow*

The strength of GET's geoforensic engineering services is our ability to gain an insight into the technical problem with our multi-disciplinary approach. Our experienced staff members have seen many cases before. If we haven't seen your problem, our team approach is your best opportunity to get timely, accurate solutions.



ACCREDITATIONS

Geotech Engineering and Testing has qualifications equal to an ISO 9000 company. The firm has been accredited by the American Association for Laboratory Accreditation (A2LA). The scope of our accreditation includes geotechnical, construction materials testing ASTM E329, C1077 for concrete, D-3740 for soils and D-3666 Bituminous. The firm has also been inspected by Cement and Concrete Reference Laboratory (CCRL), for concrete and aggregate testing. All of our equipment has been calibrated within the past 12 months.



Geotech Engineering and Testing is also involved in the American Association of State Highway and Transportation Officials (AASHTO) materials reference laboratory program.

Through rigorous quality control procedures, we assure our clients the most accurate test results. An in-house quality assurance program is maintained for all of our testing equipment. This process includes updating calibrations of equipment, records, spot checking of test procedures being used by GET's staff and procurement of the newest equipment to ensure reliability.



IN-HOUSE COMPUTER CAPABILITIES

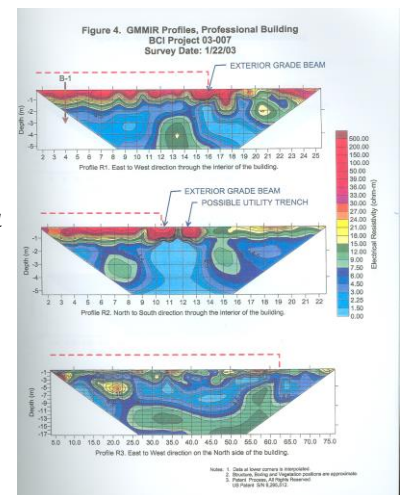
Our in-house computer capabilities include a networked computer system with 20-stations. Our engineering computer programs are as follows:

- o **Slope-Stability**
- o **Settlement**
- o **gINT**
- o **PVR**
- o **Axially-Loaded Piles**
- o **Contour**
- o **Seepage**
- o **Pile Groups**
- o **VolFlow**
- o **Wave Equation**
- o **Laterally-Loaded Piles**
- o **Pavement Design**
- o **Sheet Pile Wall Design**

PROFESSIONAL AFFILIATION

Geotech Engineering and Testing, together with the staff members, are associated with and/or are members of the following technical societies:

- o **FPA - Foundation Performance Association**
- o **PTI - Post-Tensioning Institute**
- o **ACEC - American Council of Engineering Companies**
- o **HCEC - Houston Council of Engineering Companies**
- o **ASCE - American Society of Civil Engineers**
- o **CMAA - Construction Management Association of America**
- o **TSPE - Texas Society of Professional Engineers**
- o **NSPE - National Society of Professional Engineers**
- o **ASHE - American Society of Highway Engineers**
- o **GHBA - Greater Houston Builder's Association**
- o **Chi Epsilon - National Civil Engineering Honor Society**
- o **ASTM - American Society for Testing Materials**

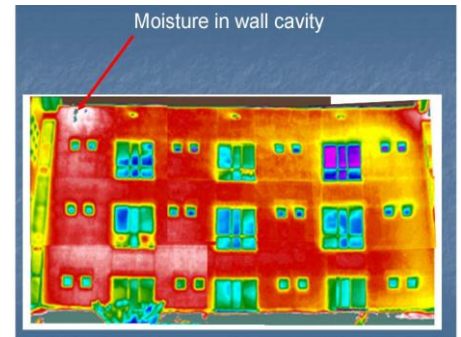


- o **ACI - American Concrete Institute**
- o **AGC - Association of General Contractors**
- o **TIBD - Texas Institute of Building Design**
- o **SAME - Society of American Military Engineers**
- o **EAA - Environmental Assessment Association**
- o **HAR - Houston Association of Realtors**
- o **APWA - American Public Work Association**
- o **SEAOt – Structural Engineer's Association of Texas**
- o **CEFPI - Council of Educational Facility Planners International**
- o **TAEP - Texas Association of Environmental Professionals**
- o **TAEP - Texas Association of Environmental Professionals**
- o **North Houston Association**
- o **West Houston Association**
- o **Pearland/Hobby Chamber of Commerce**
- o **Heights Chamber of Commerce**
- o **Cy-Fair Chamber of Commerce**
- o **Houston Hispanic Chamber of Commerce**
- o **Fort Bend County Chamber of Commerce**
- o **Cy-Fair Chamber of Commerce**
- o **South Montgomery County Chamber of Commerce**
- o **AIA – American Institute of Architects (Houston Chapter)**
- o **PAH – Pipeliners Association of Houston**



SCHEDULING

GET can generally mobilize on projects anywhere in Texas, Louisiana, New Mexico, and Oklahoma immediately after project authorization. This is because we have our own drilling rigs and laboratories. This will shorten project execution time and save the client expense. Most of the laboratory testing will be conducted in-house. We have a relatively large staff of engineers and support personnel which will result in timely execution of the project tasks.



INSURANCE

GET's insurance coverage is as follows:

TYPE OF COVERAGE	LIMITS OF LIABILITY
Worker's Compensation	\$1,000,000 each accident \$1,000,000 Disease - policy limit \$1,000,000 Disease - each employee
General Liability: Comprehensive, contractual, independent contractors, personal injury	
o General Aggregate	\$2,000,000
o Bodily Injury	\$1,000,000 each person \$2,000,000 each occurrence
o Property Damage	\$1,000,000 each person \$2,000,000 each occurrence



TYPE OF COVERAGE	LIMITS OF LIABILITY
Automobile Liability: Comprehensive, owned, hired, non-owned	\$1,000,000
Professional Liability: Errors and Omissions	\$2,000,000 each occurrence \$4,000,000 aggregate



PROJECT REFERENCES

Due to sensitive nature of geoforensic engineering, we will only provide project reference list upon a receiving a confidentiality agreement.

CONTACTS

Contact Persons	Title	E-mail
David A. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE	President	de@geotecheng.com
James Namekar, Ph.D., P.E.	Vice President	james@geotecheng.com
Fred Zandi, P.E.	CME Department Manager	fred@geotecheng.com
Vicky Bonds	Office Manager	vb@geotecheng.com
Cameron Arnold	Project Manager	cameron@geotecheng.com
Curran McDowell	Project Manager	curran@geotecheng.com



APPENDIX A

Key Personnel Resumes

**DAVID A. EASTWOOD, P. E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE
PRESIDENT**

SUMMARY

Mr. David Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE is the President of Geotech Engineering and Testing (GET). He has practiced geoforensic engineering for about 48 years, serving in key technical project management and administrative roles. His specialties are in geoforensic, geotechnical, environmental and materials engineering. Mr. Eastwood's experience in these functions includes a wide range of project types ranging from commercial, industrial, residential, public infrastructure and petrochemical projects. Mr. Eastwood's extensive experience is to provide clients with causations of distress projects and develop repair techniques. *Mr. Eastwood's geoforensic experience has been in the areas of buildings, roads, parking lots, slope failures, retaining walls, sewer leaks, pool leaks, pipelines, turfs, etc.*



Mr. Eastwood conducts training in geoforensic, geotechnical, environmental and materials engineering for the City of Houston (COH), Harris County Engineering Department (HCEC), City of Sugar Land, American Institute of Architects (AIA), Associated Builders and Contractors (ABC), American Public Works Association (APWA) and Greater Houston Builders Association (GHBA).

EDUCATION

- 1977 Bachelor of Science in Civil Engineering,
University of Houston
- 1978 Master of Science in Civil Engineering,
University of Houston
- 1978 Present
Post Graduate studies at Princeton, Rice University, and the University of Houston

LICENSES

- Licensed Professional Engineer - Texas No. 51419
- Licensed Professional Engineer - Louisiana No. 25966
- Licensed Professional Engineer - New Mexico No. 12576
- Licensed Professional Engineer - Oklahoma No. 17513
- Corrective Action Project Manager - Texas C.A.P.M. No. 01181

AWARDS/ACHIEVEMENTS

- Past President of Academy of Distinguished Civil & Environmental Engineers at the University of Houston, Cullen College of Engineering
- Distinguished Alumni of College of Engineering at the University of Houston Cullen College of Engineering
- Diplomate, Geotechnical Engineering (D.GE) Certification, American Society of Civil Engineers

- Board-Certified Professional Engineering (BC.GE.), American Society of Civil Engineers
- Fellow (F.ASCE) and Life Member (LM.ASCE), American Society of Civil Engineers
- Fellow at Foundation Performance Association (F.FPA)
- Founder and Life Member of Foundation Performance Association (FPA)
- Diplomate in Forensic Engineering (DFE) by National Academy of Forensic Engineers (NAFE)
- Fellow at Post-Tensioning Institute (F.PTI)

EXPERIENCE

Mr. Eastwood has about 48 years of experience on various aspects of geoforensic, geotechnical, environmental and materials engineering services.

OVERALL EXPERIENCE

1. Geoforensic (Foundation) Engineering and expert testimony for residential, commercial, industrial, petrochemical and public infrastructure projects. Mr. Eastwood is the founder and former President of the Foundation Performance Association, an association of engineers specializing in the evaluation of distress. In addition, he was on the Design Committee of Texas Board of Professional Engineers, Residential Foundation Committee. Mr. Eastwood is on the Post-Tensioning Institute Slab-on-Grade Subcommittee. This committee develops geotechnical design guidelines for design of post-tensioned slabs-on-grade throughout the United States.
2. Geoforensic studies for commercial and residential structures, chain stores, subdivisions, high rises, parks, educational facilities, medical facilities, shopping centers, apartment complexes, prisons, pipelines, petrochemical complexes, highways, bridges, water, wastewater, ports, airports, rail projects, and waterfront structures.
3. Mr. Eastwood was the key committee member that developed City of Houston Geotechnical Guidelines, Harris County Geotechnical Guidelines and Flood Control Geotechnical Guidelines.
4. Mr. Eastwood is on the American Society of Civil Engineers (ASCE), Texas Section, Committee that developed the document "Recommended Practices for the Design of Residential Foundations."
5. Analysis of experimental test data and correlation of data with respect to swelling characteristics of expansive soils as they relate to design of residential and commercial structures.
6. Mr. Eastwood has worked on many slope and retaining wall failures to evaluate causation for failure and develop repair systems.
7. Extensive computer programming and analyses capabilities with respect to:
 - (a) expansive soils
 - (b) pile foundations
 - (c) settlement
 - (d) dynamics of foundations

- (e) seepage
 - (f) slope stability of embankments
8. Mr. Eastwood has extensive experience in geoforensic evaluation of parking lots and pavement structures. He has been involved in many concrete and asphaltic concrete pavement designs and repair issues.
 9. Mr. Eastwood has extensive experience in conducting and evaluating non-destructive testing of soil, concrete and steel as they relate to geoforensic engineering.

PUBLICATIONS

"State of Art on Expansive Clays", report submitted to the American Society of Civil Engineers Shallow Foundation Committee on Expansive Clays, 1978.

"Hazards of Expansive Clays", Presented before the ASCE Convention in Portland, Oregon, April, 1980.

"Methodology for Foundations on Expansive Clays", published in December, 1980 edition of ASCE Journal of Geotechnical Engineering Division.

"Geotechnical Considerations in Design of Hazardous Waste Impoundments", presented before the ASCE Texas Section Spring Meeting in Fort Worth, Texas, March 1982.

"Recommended Homeowner Foundation Maintenance Program For Residential Projects In The Houston Area", published in April, 1990 Edition of Houston Builder.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE "Geotechnical Guidelines For Design of Residential Projects In The Houston Area", presented in the Soil-Structure Interaction Seminar, July 1994.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE and others "Reasons for Foundation Failure", presented in the Soil- Structure Interaction Seminar, Houston, June 1996.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE and others "Design of Foundations with Trees in Mind", presented before the ASCE, Texas Section, Spring Meeting in Houston, April 1997.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE and others "Design of Residential Foundations on Expansive Soils in Texas." Report developed for the Texas Board of Professional Engineers, March 1998.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE "State of Practice for Geotechnical Engineering for Design of Custom Homes in the Houston Area between 1990 to 2001" Presented before ASCE, Texas Section, Spring Meeting in Arlington, April 2002.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE "Application of the New e_m , y_m Soil Parameters" Presented before PTI Conference and Exhibition May, 2002.

H. Stephen Tien, Ph.D and D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Case Study of the Pavement Distress at a Service Station” Presented before ASCE, Texas Section, Fall Meeting, Dallas, September 2003.

H. Stephen Tien, Ph.D, P.E. and D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Case Studies of Residential Foundation Movements in Southern Houston Area” Presented before ASCE, Texas Section, Fall Meeting, Houston, September 2004.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Recommended Guidelines for Design and Construction of Inground Swimming Pools in Texas” Presented before ASCE, Texas Section, Fall Meeting, October 2009.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical Considerations for Soil Stability, Ditches, Embankments and Detention Ponds” Presented before FPA, July 2016.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Foundation Repair Techniques for Lightly Loaded Foundations in Texas” Presented before FPA, April 2017.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.FPA, F.ASCE “Geotechnical Considerations in Design and Construction of Retaining Walls” Presented before AIA, October 2017

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geoforensic Evaluation of Asphaltic Concrete Parking Lots” Presented before FPA, January 2018.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE and Mr. H. Nguyen, Ph.D. “Geoforensic Investigation of a Storage Dome Collapse at a Plant” Presented before FPA, January 2019.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical Considerations in Design, Construction and Geoforensic Evaluation of Tilt Wall Buildings” Presented before FPA, January 2020.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical Considerations for Design and Construction of Concrete, Asphalt and Gravel Parking Lots” Presented before AIA, March 2022.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical and Environmental Considerations for Design and Construction of Bridges” Presented before ASCE, June 2022.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical Considerations for Design and Construction of Water/Wastewater and Large Diameter Water Lines” Presented before ASCE, July 2022.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Case History in Mobile Crane and Concrete Pump Failures” Presented before AIA, March 2023.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Percent Fault Assignment in Geoforensic Engineering” Presented before FPA, May 2023.

D. Eastwood, P.E., D.GE, DFE, BC.GE., C.A.P.M., F.PTI, F.FPA, F.ASCE “Geotechnical and Environmental Considerations for Design and Construction of Roadways” Presented before ASCE, April 2023.

D. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE “Environmental and Geotechnical Considerations for Design of Educational Facilities” Presented before Geotech Engineering and Testing, December 2023.

D. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE “Environmental and Geotechnical Considerations for Design and Construction of Site Development Facilities” Presented before ASCE, January 2024.

D. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE “Environmental and Geotechnical Considerations for Design of Educational Facilities” Presented before Geotech Engineering and Testing, December 2023.

D. Eastwood, P.E., D.GE, DFE, BC.GE, C.A.P.M., F.PTI, F.FPA, F.ASCE “Environmental and Geotechnical Considerations for Design and Construction of Site Development Facilities” Presented before ASCE, January 2024.

HARRY NGUYEN, Ph.D., P.E., M.ASCE
CHIEF ENGINEER - GEOFORENSIC ENGINEERING
GEOFORENSIC, GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING



SUMMARY

Dr. Harry Nguyen, P.E., M.ASCE is the Chief Engineer for Geofensic Engineering at Geotech Engineering and Testing (GET) with responsibility for the daily operations of geoforensic, materials and geotechnical engineering services. He evaluates failure. He finds causation for distress and come up with recommendations for the repairs. He has 19 years of experience in fields of geoforensic, geotechnical, environmental, and materials engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer and plumbing leaks, pipelines, turfs, etc. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, office buildings, and subdivisions. He has also conducted studies in slope stability, retaining walls, groundwater and contamination modeling. His other experience includes research and development in the field of unsaturated soil mechanics (expansive soils). Dr. Nguyen is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

EDUCATION

- 2017 Ph.D. in Civil Engineering – The University of Texas at Arlington, Arlington, Texas
- 2011 M.Eng. in Civil Engineering – Ho Chi Mihn City University of Technology, Ho Chi Minh City, Vietnam
- 2003 B.Eng. in Civil Engineering – Ho Chi Mihn City University of Technology, Ho Chi Minh City, Vietnam

LICENSES

Licensed Professional Engineer – Texas (P.E. #140016)

AWARDS/ACHIEVEMENTS

Foundation Award of International Society of Soil Mechanics and Geotechnical Engineering,
2013

EXPERIENCE

- 2017-Present Geotech Engineering and Testing - Houston, Texas
 Project Manager
- 2014-2017 The University at Arlington, Arlington, Texas
 Graduate Research Assistant

PUBLICATIONS

Fellenius, B.H. and Nguyen M.H., 2013. Wick Drains and Piling for Cai Mep Container Port, Vietnam. ASCE GeoInstitute Geo-Congress San Diego March 3-6, 2013, Geotechnical Special Publication, GSP 230, pp. 445-462.

Bengt H. Fellenius and Nguyen Minh Hai, 2013. Large Diameter Long Bored Piles in the Mekong Delta. International Journal of Geoengineering Case Histories, 2(3), 196-207.

Nguyen Minh Hai and Bengt H. Fellenius, 2013. Failure of Embankment on Soil Cement Columns for Thi Vai Port, Vietnam. 7th International Conference on Case Histories in Geotechnical Engineering, Wheeling (Chicago) Illinois, April 29 – May 4, 2013 Paper No. 3.08, 11p.

Nguyen Minh Hai, 2013. Dai Ninh Hydro Power Plant and the Cai Mep International Container Terminal Port. Pile Buck Magazine, Vol.29, No.2, No.2 2013, 34-37.

Nguyen Minh Hai, et. Al. (Primary Editor). Proceedings of the First International Conference on Foundation and Soft Ground Engineering Challenges in Mekong Delta. Binh Duong, Vietnam, June 5-6, 2013.

Nguyen Minh Hai and Bengt H. Fellenius, 2014. O-cell Tests on Two 70-m Long Bored Piles in Vietnam. ASCE GeoInstitute Geo-Congress Atlanta February 23-26, 2014, Geotechnical Special Publication, GSP 233, pp. 482-496.

JAMES NAMEKAR, Ph.D., P.E.
CHIEF ENGINEER - GEOTECHNICAL ENGINEERING
GEOFORENSIC, GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

SUMMARY

Dr. James Namekar, P.E. is the Chief Engineer for geotechnical engineering at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforensic, geotechnical and environmental engineering, data analyses and the preparation of report recommendations. He has 25 years of experience in the fields of geoforensic, geotechnical, environmental, and materials engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, pipelines, sewer leaks, plumbing leaks, etc. His other experience includes planning and supervising geotechnical explorations, subsurface investigations, coordinating laboratory testing and analyze results, data review, report preparation and post-design services. His other experience includes research and development in the field of deep foundations, slope-stability, retaining walls, unsaturated soil mechanics. Dr. Namekar's geotechnical experience has been in landslide investigations, static and seismic slope stability analysis for embankments, cut slopes, ground improvements, jet grouting, shallow and deep foundation design and special inspection, horizontal directional drilling, settlement, lateral earth pressure, rigid pavement design. He has a lot of experience with design of foundations on expansive soils. He has also been involved in conducting many environmental site assessment studies, including Phase I and II environmental site assessment studies.



EDUCATION

- 2013 Ph.D. – University of Hawaii at Manoa, Manoa, Hawaii
- 2008 M.S./Ocean and Resources - University of Hawaii at Manoa, Manoa, Hawaii
- 2004 M.S.C.E. – Institute of Technology, Bombay, India
- 1999 B.S.C.E. – University of Pune, Pune, India

LICENSES

Licensed Professional Engineer – Texas, Hawaii

EXPERIENCE

- 2018-Present Geotech Engineering and Testing – Houston, Texas
Project Manager
- 2013-2018 Yogi Kwong Engineering, LLC – Honolulu, Hawaii
Geotechnical Engineer
- 2013-2013 University of Hawaii at Manoa – Manoa, Hawaii
Lecturer

PUBLICATIONS

Shailesh Namekar and M.C. Deo (2004), “Neural Networks to Derive Wave Spectra”, International Conference, ISOPE-2004, Toulon, France.

Namekar, S.A., Kambekar, A.R., Deo, M.C. (2005), “Neural Networks to Predict Scour of Piles in the Sea”, 2nd Indian International Conference on Artificial Intelligence (IICAI2005), December 20-22, 2005, Pune, India.

Shailesh Namekar and M.C. Deo (2006), “Application of Artificial Neural Network Models in Estimation of Wave Spectra”, Journal of Waterway, Ports, Coastal and Ocean Engg. Division, ASCE, September/October. Vol. 132, No. 5 (Cited 111 times).

Namekar, S., Yamazaki, Y., and Cheung, K.F. (2009), “Neural Network for Tsunami and Runup Forecast” Geophysical Research Letters, 36(8), L08604, Doi: 10.1029/21009GL03718. (Cited 3 times).

Nicholson, P. and Namekar S. (2012), “Earthquake-Induced Landslide Hazard Zoning of the Island of Hawaii”, International Symposium on Earthquake-Induced Landslides, November 7-9, 2012, Kiryu, Japan.

Namekar, S., “Limited Geoforensic Study for Residence in Bellaire, Texas” presented before Foundation Performance Association (FPA), February 2024.

FRED ZANDI, P.E.
CHIEF ENGINEER - CONSTRUCTION MATERIALS ENGINEERING
CONSTRUCTION MATERIALS ENGINEERING



SUMMARY

Mr. Fred Zandi, P.E. is the Chief Engineer for construction materials engineering with Geotech Engineering and Testing (GET). He has over 41 years of engineering experience related to geoforensic, materials and geotechnical engineering services. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, pipelines, plumbing leaks, etc. Mr. Zandi is an expert in soils, concrete, aggregates, asphalt and steel testing. He has also been involved in quality control observations and testing on fill placement and placement of aggregate subbase and base materials, lime stabilization, asphalt, concrete, steel, bolting, non-destructive testing and underground utility installations.

EDUCATION

1983 M.S.C.E., Structural/Geotechnical – University of Louisville, Louisville, Kentucky

LICENSES

Licensed Professional Engineer – Texas, Indiana

AWARDS/ACHIEVEMENTS

- American Consulting Engineering Council – Public Engineer of the Year Award, 2000
- Distinguished Hoosier Award, 2002

EXPERIENCE

2020-Present Geotech Engineering and Testing - Houston, Texas
CME Project Manager

2018-2019 Pars Consulting Engineers, LLC – Indianapolis, Indiana
President

2015-2018 Franco Consulting Engineers – Indianapolis, Indiana
President

2006-2015 K & S Engineers, Inc. – Highland, Indiana
Vice President/Principal Engineer

2002-2006 Chicago Testing Laboratory – Warrenville, Illinois
President

1986-2002 Indiana Department of Transportation – Albany, Indiana
Chief Engineer/Deputy Chief Engineer/Chief of Construction and Materials
Divisions/Chief Soils Engineer/Staff Design Engineer

MASON DERAKSHANDI, Ph.D., P.E.
PROJECT MANAGER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING



SUMMARY

Dr. Derakshandi is a project manager at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforensic and geotechnical explorations, data analyses and the preparation of report recommendations. He has several years of experience in fields of geoforensic, geotechnical, materials and environmental engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, plumbing leaks, etc. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. His other experience includes subsurface investigations field and laboratory testing, slope stability, earth retaining systems, excavations, landfills, geotechnical earthquake engineering, soil improvement, field investigation, saturated soil mechanics (expansive soils). Dr. Derakshandi is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

EDUCATION

- 2007 Ph.D in Civil Engineering-Soil Mechanics and Foundation Engineering – Amirkabir University of Technology & The University of Texas at Austin
- 2000 M.Sc. in Civil Engineering-Soil Mechanics and Foundation Engineering – Tarbiat Modares University (TMU), Tehran, Iran
- 1998 B.S. in Civil Engineering – Isfahan University of Technology (IUT), Isfanhan, Iran

LICENSES

Licensed Professional Engineer – Texas

EXPERIENCE

- 2020-Present Geotech Engineering and Testing - Houston, Texas
Project Manager

JOHN WANG, Ph.D
PROJECT MANAGER
GEOTECHNICAL, ENVIRONMENTAL AND GEOFORENSIC ENGINEERING



SUMMARY

Dr. Wang is a Project Manager at Geotech Engineering and Testing (GET) with the responsibility for daily operations of Geoforensic and geotechnical explorations, data analyses and preparation of report recommendations. He has several years of experience in field of geoforensic, geotechnical, environmental, and materials engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, plumbing leaks, etc. He other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. His other experience includes research and development in the field of unsaturated soil mechanics (expansive soils). Dr. Wang is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

EDUCATION

2020 Ph.D, Civil Engineering – University of Texas at Arlington, Arlington, Texas

2015 B.S.C.E. – University of Mount Union, Alliance, Ohio

EXPERIENCE

2020-Present Geotech Engineering and Testing - Houston, Texas
 Project Manager

PUBLICATIONS

Zhang, N., Yui, X., & Wang, X. (2017). “Use of a Thermo-TDR Probe to Measure Sand Thermal Conductivity Dryout Curves (TCDCs) and Model Prediction.” *International Journal of Heat and Mass Transfer*, 115, 1054-1064.

Zhang, N., Wang, X., & Yu, X. (2017). “Measurement of Thermal Conductivity Dry-Out Curves for Sands and Model Prediction.” *Geotechnical Frontiers 2017: Geotechnical Materials, Modeling, and Testing*, GSP 280, 791-799.

Wang, X., Yu, X. (2018). “Evaluation of Two Thermo-TDR Probes for Soil Moisture, Density, and Thermal Conductivity.” *Proceedings of GeoShanghai 2018 International Conference: Transportation Geotechnics and Pavement Engineering*. GSIC 2018. Springer, Singapore, pp. 44-55.

Zhang, N., Yu, X., & Wang, X. (2018). "Validation of a Thermo-Time Domain Reflectometry Probe for Sand Thermal Conductivity Measurement in Drainage and Drying Processes." *Geotechnical Testing Journal*, Vol. 41, No. 2, pp. 403-412.

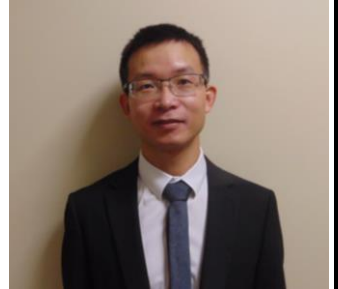
Wang, X., Yu, X., Kaneza, N., & He, S. (2019). "Measurement of Thermal Conductivity Dryout and SWCC Curves for Sands Using a Modified Hanging Column Device." *Geo-Congress 2019: Geotechnical Materials, Modeling, and Testing*, GSP 310, 794-803.

Wang, X., "Geoforensic Study for Detention Pond Segmented Block Wall Failure", Presented before Foundation Performance Association (FPA), February 2024.

BRUCE XIA, Ph.D
PROJECT MANAGER
GEOTECHNICAL, ENVIRONMENTAL AND GEOFORENSIC ENGINEERING

SUMMARY

Dr. Bruce Xia is a Project Manager at Geotech Engineering and Testing (GET) with the responsibility for daily operations of geoforensic and geotechnical, environmental and geoforensic explorations, data analyses and preparation of report recommendations. He has several years of experience in field of geoforensic, geotechnical, environmental and materials engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, plumbing leaks, etc. He other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. His other experience includes research for testing technique for triaxial testis on soils, developed computer programs, developed and presented presentations, geotechnical laboratory tests, soil lab reports, ring shear test on saturated clayey soils, surveying, inclinometer and tension indicator to monitor the horizontal displacement of soils and stress of steel supported structure during underground construction. Dr. Xia is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.



EDUCATION

- | | |
|------|---|
| 2022 | Ph.D, Geotechnical Engineering – Missouri University of Science and Technology, Rolla, Missouri |
| 2016 | M.S. Geotechnical Engineering – Institute of Rock and Soil Mechanics, Chinese Academy of Sciences, Wuhan, China |
| 2013 | B.S.C.E. – Wuhan University of Technology, Wuhan, China |

EXPERIENCE

- 2022-Present Geotech Engineering and Testing - Houston, Texas
Project Manager

PUBLICATIONS

Xia, X. L., Zhang, X., Fayek, S., and Yin, Z. Z. (2021). “A Table Method for Coded Target Decoding and Application to Three-Dimensional Reconstruction of Soil Specimen during Triaxial Testing”. *Acta Geotechnica*. 16(12), 3779-3791. (Impact Factor: 5.856)

Xia, X. L., Zhang, X., and Mu, C. M., (2021). “A Multi-Camera Based Photogrammetric Method for Accurate Three-Dimensional Full Field Displacement Measurements of Geosynthetics in the Tensile Test”. *Geotextile and Geomembrane*. 49(5), 1192-1210. (Impact Factor 5.292)

Xia, X. L., Zhang, X., Yin, Z. (2020). “Deep Learning Aided Detection for 3D Reconstruction and Volume-Change Measurement of Unsaturated Soils”. In *Geo-Congress 2020: Geo-Systems, Sustainability, Geoenvironmental Engineering, and Unsaturated Soil Mechanics*, pp. 387-393. Reston, VA: American Society of Civil Engineers, 2020.

NIKOLAS DAREHSHOORI, M.S.C.E.
PROJECT MANAGER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

SUMMARY

Mr. Darehshoori is a project manager at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforesic and geotechnical explorations, data analyses and the preparation of report recommendations. He has several years of experience in fields of geoforensic, geotechnical, materials and environmental engineering. He has been involved in geoforensic studies as they relate to commercial structures, residential, slope failures, pavements, retaining walls, sewer leaks, plumbing leaks, etc. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. His other experience includes research and development in the field investigation, testing soil and CBR for quality control, design of reinforced soil walls, saturated soil mechanics (expansive soils). Mr. Darehshoori is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.



EDUCATION

- 2013 M.S. in Geotechnical Engineering – Azad University of Najaf-Abad, Isfanhan, Iran
- 1994 B.S. in Civil Engineering – Azad University of Najaf-Abad, Isfanhan, Iran

EXPERIENCE

- 2018-Present Geotech Engineering and Testing - Houston, Texas
 Project Manager

SONNY EHSAAE, B.S.C.E.
PROJECT MANAGER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING



SUMMARY

Mr. Ehsaee is a project manager at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforensic and geotechnical explorations, data analyses and the preparation of report recommendations. He has several years of experience in fields of geoforensic, geotechnical, materials and environmental engineering. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. His other experience includes subgrade, soil and aggregate compaction, testing and analyzing soil samples, aggregates and mixing of batches, inspected placement of reinforcing steel and concrete, structural steel, tested with nuclear gauge, inspected concrete pour and performed concrete tests. Mr. Ehsaee is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

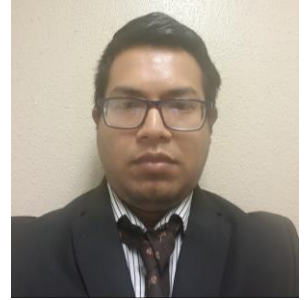
EDUCATION

2013 B.S.C.E - Civil & Environmental Engineering – University of Maryland, College Park, MD

EXPERIENCE

2021-Present Geotech Engineering and Testing - Houston, Texas
Project Manager

**LEO ISLAM, M.S.C.E.
PROJECT MANAGER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING**



SUMMARY

Mr. Islam is a project manager at Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geoforensic and geotechnical explorations, data analyses and the preparation of report recommendations. He has several years of experience in fields of geoforensic, geotechnical, materials and environmental engineering. His other experience includes research and development in the field of soils, rock materials testing for slopes, retaining walls, pavements, low to high rise buildings, slope protection remedial works, deep foundations, flood control channels, community centers, office buildings, and subdivisions. Mr. Islam is also actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies.

EDUCATION

2019 M.S.C.E. – University of Texas at Arlington, Arlington, Texas

2017 B.S. in Civil & Environmental Engineering – North South University, Dhaka, Bangladesh

EXPERIENCE

2019-Present Geotech Engineering and Testing - Houston, Texas
Project Manager

APPENDIX B
Accreditation Certificates



Accredited Laboratory

A2LA has accredited

DAE & ASSOCIATES, LTD
DBA GEOTECH ENGINEERING AND TESTING
Humble, TX

for technical competence in the field of

Geotechnical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 26th day of January 2024.

Mr. Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0075.02
Valid to December 31, 2025

For the tests to which this accreditation applies, please refer to the laboratory's Geotechnical Scope of Accreditation.



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DBA GEOTECH ENGINEERING AND TESTING
Humble, TX

for technical competence in the field of

Construction Materials Testing

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