MICHAEL W. OAKLAND, PH.D., P.E.

Vice President

Summary

Dr. Michael Oakland has extensive experience conducting geotechnical investigations and providing foundation design recommendations for projects worldwide. He has been the lead geotechnical engineer on hundreds of projects requiring all types of foundation systems including driven piles, drilled piles, deep shafts, load bearing elements, ground improvement, shallow foundations and hybrid systems of all kinds. Dr. Oakland has served as the geotechnical engineer of record on a large variety of low-rise and high-rise building projects, dams, water and wastewater treatment plants, bridges, roadways, slope stabilization, tanks, pipelines, culverts and deep tunnels. He served as the manager for a major geotechnical engineering firm and has significant experience with ground vibrations and the impacts of blasting. Dr. Oakland's Master's and Ph.D. work involved highway slopes, which included geotechnical analyses using advanced numerical methods.

Areas of Technical Expertise

- Geotechnical Engineering
- Pavements and Airports
- Support of Excavation Systems

Education

- PhD, Civil Engineering, 1986, Purdue University
- MSCE, 1981, Purdue University
- BSCE, 1980, Pennsylvania State University

Registrations

- Professional Civil Engineer in FL, IN, KY, MA, MI, NJ, NY, OH, PA, RI, TX

Professional Activities

- Boston Society of Civil Engineers—Geotechnical Group Chairman, 1995-1996; Computer Group Chairman, 1990-1991
- Committee Member, Massachusetts State Building Codes
- Member, Deep Foundations Institute

Select Project Experience

Geotechnical Engineering

Modification COE Levee, Alleghey River, NY. Designed modifications to an existing levee to construct a haul road that crossed the levee at allowable grades to facilitate clean-up of the river. The design required that the stability and function of the levee not be decreased.

TVA Tailings Dam, Paradise, KY. Evaluated the stability of an adjacent tailings dam. Designed an access road up the face of the dam to accommodate deliveries made by barge using off-road heavy haul equipment.

Wastewater Plant Levee, Sumat Prakarn Treatment Plant, Bangkok, Thailand. Conducted a design review of an extensive levee system planned to prevent flooding of a new treatment plant in Bangkok. The levee berms were to be constructed over very soft clays.

Willis Ave. Bridge Replacement, New York, NY. Design of steel sheet pile cofferdams for access and containment of debris and blast pressures during demolition of existing granite pier cofferdams using blasting.

Broadway Bridge Replacement, Boston, MA. As part of the Central Artery D9A, the alignment of the Broadway Bridge was changed requiring a new bridge over the South Station railroad yard.

Hilton Gardens Hotel, Boston, MA. Provided foundation design recommendations for a new 4-story hotel to be constructed on a difficult site between MHD Rt. 9, the DPW Drainage culvert and the MBTA Green Line.

MBTA Yawkey Station, Boston, MA. Provided foundation design recommendations and field monitoring during construction for the new station in the Kenmore Square area of Boston.

*Denotes work performed with previous employer.

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Columbia Medical School Nurses Building, New York, NY,. Served as the geotechnical engineer for a new 14-story concrete structure founded at the edge of the rock bluff on Manhattan's Upper West Side. The unique structure was supported by a concrete core founded on the competent bedrock with cantilevered slabs forming a column-free view.

Pavements and Airports

Ft. Lauderdale Airport, Prebid Design of Soil Mix Ground Improvement, Ft. Lauderdale, FL. Provided a prebid design for Trevilcos of ground improvement as part of the airport expansion below MSE walls and fills up to 40 feet in height.

FDR Drive, Evaluation of Pavement Distress, New York, NY. Assessed pavement distress on the east side of Manhattan below the United Nations plaza deck to assess long-term reconstruction of this portion of the roadway.

Remediation of Airport Runway Sinkholes, Manchester, NH. Provided initial investigation and recommendations to remediate sinkholes that periodically form on the runway of the Manchester airport.

Worcester Airport Pavement Replacement, Worcester, MA. Investigated subsurface conditions and provided subgrade preparation recommendations for replacement of paving on the taxiways of the regional airport.

Cleveland Hopkins International Airport, Airport Culvert Design Recommendations, Cleveland, OH. Design recommendations for construction of four 10.5-foot-diameter culverts below a new runway extension.

Subgrade Preparation for New Runway Paving, Worcester, MA. Conducted test pits, test borings and CBR testing to assess subgrade modifications in preparation for replacement of paving on several airport taxiways and aprons at the airport.

Westchester Region Airport, Subgrade Preparation and New Structures, Westchester, NY. Completed a geotechnical investigation and made design recommendations for replacement of apron paving and new drainage facilities at the as part of a recent expansion.

City of New York Value Engineering Study, New York, NY. Evaluation of paving operations to identify alternate means and methods that could be used to extend the life of pavement or make routine operations more efficient.

Support of Excavation Systems

Earth Retention Design, Seattle Center Arena, Seattle, WA. Designed the perimeter earth retention system around the existing Key Arena to expand the below-grade event space for the new Seattle Center Arena. The excavation was approximately 65 feet deep and was performed using a permanent tiedback soldier pile with shotcrete lagging system.

Peer Review Riyadh Transit System Station, Riyadh, Saudi Arabia. Served as the geotechnical reviewer for 12 new below-grade stations to be constructed in the downtown area of Riyadh. The stations ranged in depth from about 70 to more than 100 feet. The design had to consider challenging dewatering, impact to adjacent buildings, interface with tunnel systems and excavation in soft bedrock.

Slurry Wall Design, Harvard Law School, Cambridge, MA. Prepared detailed design for a 4-level deep slurry wall for the new Law School building which is at the heart of Harvard's Campus. The slurry wall was within 17 feet of the MBTA Redline subway tunnel and immediately adjacent to several of Harvard's historic structures which had strict deformation limitations.

Central Artery D9A Tunnel Jacking, Boston, MA. Provided design recommendations for support of the railroad facilities during jacking of 4 highway tunnel sections below the rail train storage yards. The jacking operation was within several feet below the active train tracks. Ground freezing was selected to stabilize the subgrade during the jacking operations.

Sworn Testimony

Deposition, U.S. Bank, Nat'l Ass'n v. Tara Retail Grp. Regarding the causation of a culvert loss providing access to a retail area that was not the result of poor maintenance or lack of repair but rather due to undersizing of the original culvert. April 28, 2021.

Deposition and Trial, Jenco Constr., Inc., v. City of Des Moines and Shuck-Britson, Inc., Grand Avenue Bridge Abutment Pile Installation, Des Moines, IA. Evaluated claim by contractor regarding differing site conditions during sheet pile and H-Pile installation for a bridge replacement over a river.

Deposition and Trial, Triple R Paving, Inc., v. Broward County, Florida and CH2M-Hill, Inc., Runway Paving Distress and Subgrade Preparation, Ft. Lauderdale, FL. Evaluation of subgrade preparation related to rutting of a new taxiway at the Ft. Lauderdale Airport.

Deposition and Trial, Monaco Hotel Damage Claim, Sunny Isle Beach, FL. Defended a new condominium contractor against claims that construction vibrations and dewatering impacted an adjacent property. December 2019.

Deposition, Bahama Bay II Condominiums, Orlando, FL. Investigated several condominium buildings to show that the sinkhole had no impact to the buildings beyond the area of one building directly adjacent to the sinkhole. October 16, 2018.

Deposition, Construction Claim, I-71 and MLK Interchange, Cincinnati, OH. Represented the contractor in a claim that there was inaccurate quantity information during the prebid process which resulted in underestimating the construction cost. July 2018.

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Litigation

EPT Montecillo Dev. East, LP v. Mega Con, LLC, Toney Ge Conde, Conde, Inc and Yvonne Conde Curry, PE, Commercial Development Slope Failure, El Paso, TX. Served as an expert witness for a developer after a slope, being constructed to specifications developed by his civil engineer, failed during construction.

Duck River Dam, Cullman, AL. Regarding placement and performance of various aspects of a recently completed dam including the clay core, filter drains and foundation drains.

Retaining Wall Failure and Reconstruction, McFarland Housing, Harrisburg, PA. Geotechnical expert for designing and pricing repairs to a condominium housing complex after failure of a 25-foot high retaining wall that supported the parking area for the complex.

MSE Wall Evaluation, Creves Coure, MO. Geotechnical engineering expert evaluating claim for compensation by the builder's insurance carrier after failure of a 35-foot-high MSE wall during construction of a condo facility.

Evaluation of Pipe Jacking Failure during Construction, I-595 Managed Lanes Project, Ft. Lauderdale, FL. Developed an investigation program and identified the cause of failure of a microtunneling operation below an existing highway.

Grain Silo Settlement Claim, Pringle, TX. Serving as an expert to determine causation and designing remedial repairs for 85-foot-high grain silos that settled differentially upon loading. Remediation will include a program of compaction grouting intended to stabilize the foundation and lift the silos back to the original configuration.

Oil Storage Tank, Houston, TX. Evaluated the cause of excessive settlement below a portion of a new oil storage tank. The tank foundered on rigid inclusion elements installed after surcharging the site using wick drains settled excessively in one portion upon test loading.

Alternative dispute resolution

Tryp Hotel Claim, Ft. Lauderdale, FL. Provided expert consultation to evaluate a claim as well as repairs to a vibro-replacement ground modification system used to support the 7-story hotel. Coordinated and directed a test pit program to review the actual installation and provided analysis and calculations to support the conclusions that the vibro-replacement columns had not been installed properly.

Ft. Calhoun Decline, Ft. Calhoun, NE. Serving as a consultant to resolve tunneling issues as part of installing two new declines to allow underground mining of limestone at their existing facility; resolved at mediation.

Evaluation Building Movement and Underpinning Repairs, Port Imperial Condominiums, West New York, NJ. Evaluated settlement data and the performance and condition of condominium units that had settled and provided recommendations for repairs and underpinning; resolved during arbitration.

Settlement of Bellevue Hospital during Construction of New Building, New York, NY. Served as the expert for the defendant as part of arbitration related to settlement of the existing Bellevue Hospital during installation of steel sheet piling.

Select papers, lectures and publications

"Geophysical Investigations Enhance Geologic Characterization in Support of Pile Foundation Program," 45th Annual Conference on Deep Foundations, to be presented virtually, October 2020. (co-author and presenter)

"Real Time Monitoring of The Historic Old South Church, Boston, Massachusetts," Deep Foundations Institute Annual Conference, Oakland, CA, October 2015 (co-author and presenter)

"Analysis and Performance of Sheet Pile Cofferdams under Demolition Blast Loads," Deep Foundations Institute, Annual Conference, Houston, TX, October, 2012 (co-author and presenter)

"Design and Analysis of Cooling Tower Pile Foundations," Deep Foundations Institute, Annual Conference, Los Angeles, CA, October, 2010 (co-author and presenter)

CONTACT

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