

TECHNICAL PRESENTATION July 12, 2023



Geoforensic Study of a Two-Story Building in Sugar Land, Texas Presented by Dr. John Wang, Ph.D., with <u>Geotech Engineering and Testing</u>

**BIO**: Dr. John 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 the fields of geoforensic, geotechnical, environmental, and materials engineering and has been involved in geoforensic studies as they relate to

commercial structures, residential structures, slope failures, pavements, retaining walls, sewer leaks, and plumbing leaks. Dr. Wang has been involved in 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. Additionally, his research and development experience covers the field of unsaturated soil mechanics for expansive soils, and he is actively involved in environmental site assessment projects, including Phase I and Phase II Environmental Site Assessment Studies. Dr. Wang received his B.S.C.E. from the University of Mount Union in Alliance, Ohio, and his Ph.D. in Civil Engineering from the University of Texas at Arlington.

**ABSTRACT**: The Sugar Land Police Department/Court Building in Sugar Land, Texas, was built in 1996 and wings were added in 2004. This two-story building with a steel frame and brick veneer has experienced foundation and structural movements, resulting in cracks and separations in the wall, sheetrock, tiles, and floor slabs. The building is supported by a spread footing-type foundation in highly expansive soils. A study was conducted to identify the causes of foundation movements and recommend repair techniques that would reduce future movement and cracking of the structure.

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