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Time: 10:15 to 11:15 AM

Title: When Engineering and Construction Expertise Come Together: An Expedited Structural Due-Diligence Evaluation

Abstract: A prospective purchaser retained a forensic engineering firm to evaluate observed deterioration within a two-story cast-in-place concrete parking garage supporting a four-story multi-family structure. The investigation identified distress at an expansion joint and column capitals, including concrete spalling and exposed reinforcement. The company developed a conceptual repair approach using supplemental steel columns and localized concrete repairs. With only eight days remaining before a planned $30-million acquisition, another forensic engineering firm was retained to perform an expedited prescriptive review of the original structural design and evaluate the proposed repair concept. This company reviewed the post-tensioned parking and podium slabs, cast-in-place columns and column capitals, expansion-joint dowels, CMU shear walls, geotechnical information, and proposed remedial steel columns. The evaluation identified conditions warranting additional investigation, including potential long-term corrosion of expansion-joint dowels and uncertainty regarding column-capital reinforcement, while concluding that the primary structural systems and proposed remedial columns were generally acceptable. This paper examines how two forensic engineering firms coordinated technical review, repair evaluation, and professional judgment under a compressed due-diligence schedule to support an informed property acquisition decision.



Michael Stall is a registered professional engineer (#65893) in Texas and is a National Academy of Forensic Engineers board-certified forensic engineer (DFE). Stall earned a master of science in civil engineering from Stanford University and a bachelor of science in architectural engineering from the University of Texas at Austin. He has worked as an expert witness in the resolution of design, construction, and property insurance settlement disputes over the past 15 years. He has more than 45 years of construction experience as a carpenter, ironworker, foreman, supervisor, engineer, scheduler, and construction manager for construction of shopping centers, single-family homes, multi-family buildings, manufacturing plants, power plants, and medical facilities. He has evaluated hundreds of buildings during the past 30 years that have suffered damage from fires, explosions, hurricanes, earthquakes, tornadoes, hail storms, design defects, and construction defects. He has published peer-reviewed articles in the *NAFE Journal* about construction defects and resolution of schedule delay claims and has made numerous presentations to industry and university

groups about construction management and disaster recovery. Stall is founder and president of Managed Response, Inc. (MRI), a Texas-registered professional engineering firm (#00546) and a general contracting company that specializes in evaluation and repair of distressed and damaged properties. MRI is a licensed general contractor in Florida and California and has been in business since 1998. MRI performs construction, renovation, disaster reconstruction, and forensic engineering.



Brian C. Eubanks, MSCE, PE, SE, MAC, D-IBFES, DFE, is Senior Principal Engineer and founder of Paragon Structural Engineering, LTD. With over two decades of experience, he leads a multi-disciplinary team in the structural design and forensic investigation of residential, commercial, and institutional projects. He is a Board-Certified Diplomate in forensic engineering by the National Academy of Forensic Engineers (NAFE) and the International Board of Forensic Engineering Sciences (IBFES) and holds professional engineering licenses in 15 states. Eubanks has been engineer-of-record on a diverse design portfolio and possesses significant proficiency in forensic investigations. He is recognized for expertise in structural systems, building envelopes, components and cladding, and construction defect evaluation. He is also a certified Mold Assessment Consultant (MAC), further supporting his forensic investigations involving moisture intrusion, indoor air quality, microbial growth, and building envelope failures. He is an active member of national and regional engineering committees, has authored numerous industry standards and technical publications, is a frequent expert witness in mediation, arbitration, and court proceedings, and served as an arbitrator. He regularly presents at engineering conferences and professional seminars, demonstrating his commitment to advancing best practices in engineering and forensic analysis.