



The Case of the Sagging Floors – What Engineers Should Know

Best Presentation at the Structures 2012 Congress

By Craig A. Copelan, P.E., M. ASCE and Joyce E. Copelan, P.E., M. ASCE, SEI Sacramento Section Chair

At the SEI Structures 2012 Congress in Chicago, conference attendees selected the presentation they found to be the “Best of the Best” among those offered during the three days of technical sessions. This year’s winner for best presentation was “The Case of the Sagging Floors,” a panel presentation moderated by John Tawressey of KPFF Consulting Engineers, an engineering firm headquartered in Seattle. It is a multi-office, multi discipline firm with projects across the United States and around the globe. Mr. Tawressey is a licensed professional engineer in the state of Washington and a past president of the Structural Engineering Institute.



Originally founded in 1960, KPFF Consulting Engineers has grown from an office with 20 staff to more than 900 since Mr. Tawressey joined the firm. His educational background includes a bachelor’s degree in civil engineering from Cornell University, where he graduated with distinction, and a master’s degree from Cornell University in Theoretical and Applied Mechanics. Mr. Tawressey’s first assignment after completing his education was with the Boeing Commercial Airplane group where he gained five years of valuable experience. He joined KPFF Consulting Engineers in 1973, and he became Chief Financial Officer and Vice President in 1976. During his tenure, the firm has experienced steady growth. Mr. Tawressey’s assignments in the Seattle area have included the curtain wall structural design of the Seattle Art Museum, the Starbucks Building, Washington Mutual Tower, and the First Interstate Center. Utilizing his experience in the development of reinforced brick panels and light-framed stone curtain wall panels, he taught structural masonry (CEE 455) at the University of Washington for more than 26 years. Mr. Tawressey has given back a great deal to his profession and the community during the course of his career, serving in various leadership capacities with ASCE’s Structural Engineering Institute, including a term as president of the Institute from 2001 to 2003. He was recognized by his peers in the Washington Society of Professional Engineers as their Engineer of the Year in 2011. Mr. Tawressey is keenly interested in the professional practice aspects of structural engineering, serving as president of the Structural Engineers Risk Management Council [SERMC], president

of the Masonry Society and chair of SEAW’s Professional Practice Committee.

Mr. Tawressey’s background and interests, as well as the credibility he has gained through his years of service to the industry and profession, made him an excellent moderator for this panel discussion of a project that was the subject of a major construction claim. Because of the sensitive status of the claim, which has only recently been resolved, the presenters are not identified as a part of this article. They included the structural engineer, the structural engineer’s expert and the defense attorney who assisted with the resolution of the claim. The presentation covered the design and construction of an upscale high-rise condominium. The structure was framed in concrete with two-way concrete slab floor construction. Pressure from the developer to minimize cost demanded longer spans and thin slabs. The engineer used advanced analysis methods to meet deflection calculation requirements, using tools such as SAFE and the RAM Concept. Moreover, construction schedules were tightened, forms were pulled sooner, and reshoring sequences shortened. The project experienced short-term deflections that were inconsistent with the developer’s expectations and budgets. The floors required fill and grinding and, as a result, higher than expected costs resulted in a claim against the structural engineer. In this claim, forensic experts were willing to testify that the design engineer should have been using calculation methods other than what is prescribed by the applicable code or what is consistent with the modern standard of care used by practicing engineers when calculating deflections of two-way slabs. This is a situation many in practice today

could relate to; the presentation provided an insight into the resolution of a claim in an area of practice that was familiar to those in the audience. Because of his years of technical experience, enhanced by service within his community, Mr. Tawressey has developed skills in communicating complex subjects in a straightforward and clear manner. These skills allowed him to lead this session in a manner that the members of the audience were able to easily grasp and find relevant to their own work experience. This excellent panel presentation and the leadership provided by Mr. Tawressey in its development, is acknowledged by the professions in attendance by selecting it as the SEI Structures 2012 Congress Best Presentation. ■

Mr. Tawressey is looking for a professional practice liability story to be told at the next Structures Congress to be held in Pittsburgh, May 2-4, 2013. If you have a story that would be appropriate, he can be reached at johntaw@aol.com or 206-622-5822.

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