

About Kurt Hoigard, P.E., SECB, FASTM



"As President of Raths, Raths & Johnson, Inc. (RRJ), my time is split between managing the firm and actively working on projects. I was hired by the firm's founders as I was finishing my Master's degree in structural engineering and learned everything I could from them. I ran load tests in our laboratory, performed complex structural calculations, investigated failing building facades and structures,

and ultimately advanced to become a firm leader and co-owner of our nationally recognized engineering, architecture, and forensics consulting practice."

"Having logged 34 years of experience and obtained Professional Engineer licenses in more than 30 jurisdictions, my project work currently involves structural and building enclosure consulting, peer review, failure investigation, repair design, and expert witness testimony for projects ranging from multifamily construction to NFL stadiums. I like to tell people that my practice is like CSI for the portions of buildings that hold them up and/or keep the weather out. My litigation activities involve the forensic aspects of determining what is actually wrong with troubled buildings, how they got that way, and which parties are responsible for the expressed malperformance issues. Written reports, presentations, and testimony at depositions and mediation, arbitration, and court proceedings are common follow-on activities. Clients for these services have included insurance companies and attorneys representing building owners, developers, general contractors, specialty subcontractors, material suppliers, and manufacturers, as well as architects, engineers, and local, State, and Federal government agencies."

"Thought leadership has always been very important to me and has been at the forefront of building my career as a forensic engineer. My interest in material performance research started in graduate school and has continued to this day through our in-house testing laboratory, allowing me hands-on opportunities to learn how structural and building enclosure materials and assemblies actually perform. I have shared my accumulated knowledge with the engineering, architecture, and construction worlds through more than 30 years of standards development with ASTM International, publishing nearly 50 articles, serving as the chairman of two ASTM symposia, and making numerous presentations to construction industry organizations. Venues for my publications and presentations have included the American Concrete Institute, American Society of Civil Engineers, American Institute of Steel Construction, ASTM International, Construction Specifications Institute, American Institute of Architects, and the American Bar Association. My thought leadership activities have been recognized nationally through elevation to Fellow of ASTM International and being named in multiple editions of Who's Who Legal: Construction as among the world's leading expert witnesses."

Building Structure & Enclosure

Approaching Construction Cases as an Expert Witness

As Kurt Hoigard explains below, you rarely see construction claims hitting the news, unless something catastrophic has happened which has led to unfortunate deaths. Nonetheless, when construction goes wrong, it can have dire impacts, and often an Expert Witness is needed to determine what exactly went wrong so justice can prevail.

Below, Kurt explains the various ways that construction goes wrong and how he assists in such cases.

What are the various stages during which construction can go wrong?

I have seen problems crop up in many ways during both design and construction. Schedule compression to reduce lending costs and bring revenue generation on-line faster has resulted in significant and ongoing changes to the way buildings are constructed.

Shortened design time, reduced design fees, and increasingly specialized componentry have been partially offset through common adoption of delegated design. This process allows construction to start before the building design is complete, with portions of the design, including structural and building enclosure systems, being completed by contractors rather than the primary A/E team. Completion

of the building design can go seriously wrong if the A/E and construction teams don't understand their respective responsibilities.

For the delegated design process to work as intended by the International Building Code, the primary A/E team first needs to clearly define the functional and performance requirements of the delegated elements. The construction team then needs to retain qualified design professions to develop the delegated designs, followed by the A/E team reviewing the results for conformance with the specified requirements and keeping the local building code officials informed. Problems in any of these three phases can lead to questionable results.

Additional common problem areas I often see are material selection and implementation.



As the construction industry evolves, the old standbys of wood, brick, concrete, and steel have been joined by a plethora of new products, each claiming to be better, cheaper, or faster. Green building initiatives and changes to energy codes have further complicated material selection and detailing, leaving designers and constructors struggling to keep up. Problems frequently arise when the wrong product is selected for the wrong application or when craftsmen are not properly trained in the nuances of successful installation, many of which are product specific.

What can be done to prevent this from happening in the first place?

In a word: education. Knowledge of building code requirements for delegated design and the responsibility each party must undertake are key to reducing problems associated with this mode of project delivery. Readily available detailed information on intended conditions of use and proper installation techniques is critical to promoting proper usage of construction materials. This information can be provided by manufacturers, trade schools, and professional training programs, to name a few, but is only effective if design team and construction team members are aware of the information and choose

to take advantage of it. Too often I find the root causes of malperformance, particularly in the building enclosure world, are related to ignorance of the basic premises of product use.

How do you approach a case as an expert witness?

I am an engineer by training and at heart, so of course, my first stop is to look for data and facts. Whether working for an owner simply wanting to solve a problem with their building or for an attorney needing expert assistance, hearing the perceived problems from the people who lived them can prove very beneficial. Learning what the symptoms are, where they occur, and under what circumstances they occur are critical pieces of basic information that should not be glossed over. When at all possible, firsthand examination of the "patient" should be undertaken to independently verify the reported symptoms.

Close on the heels of defining symptomology is my preference to obtain and review as much of the available design and construction paperwork as is feasible. Depending on the issues of the case, structural and architectural drawings, project specifications, addenda, component shop drawings, RFIs and responses, change directives, inspection reports, contracts, subcontracts, and

photographs are standard fare in my document requests.

Recently I have found that significant additional information can be found in the digital domain from such sources as satellite imagery, security cameras, and social media. Nearly everyone has a camera with them today in the form of their mobile phone, creating a wealth of potentially useful images waiting to be discovered. In one of my cases, a state government agency put out a public call for still and video imagery of a performance venue prior to and during a wind-induced collapse. Media files uploaded to an event-specific website were then analyzed on a frame-by-frame basis, providing invaluable insight into the moment of collapse initiation.

The culmination of all the fact finding, document review, and on-site investigation is, of course, the development of opinions supported by the preceding investigative work. I tell every client that I "call it straight." My opinions are not preordained to turn out to be everything they desire, but they will know where they stand based on an honest opinion and can rely on that information when developing their legal strategy. When the facts are less than ideal, my role sometimes morphs into being a retained consultant, a valuable,

behind-the-scenes trusted advisor. When the facts are supportive, I find myself being the lead testifier. I am equally comfortable in either role.

What are common cases you see?

The most common construction cases I see involve water leakage and resulting damage to occupied spaces. The leaks might involve the roof, windows, various opaque cladding materials or, quite frequently, the interfaces between each of these. Hidden damage in the forms of metal corrosion and wood product decay can sometimes be startlingly severe despite modest outwardly visible symptoms. These claims, though they rarely garner news coverage, can run into multiple millions of dollars in repair costs and legal fees.

The cases that receive the most publicity are those involving structural failures and collapses, often with tragic loss of life. The underlying causes of these sad events can frequently be traced back to a fundamental error in the design concept, defective erection sequence, profoundly understrength materials, or unchecked long-term deterioration. In some cases, design errors have gone unnoticed for long periods of time until the right set of circumstances result in sudden and catastrophic failure. **LM**