



2020 CLM Construction Conference
September 30 - October 2
Chicago, IL

“A Perfect Marriage: Resiliency and Insurability”

I. The Catalyst for the Panel Conversation...Catastrophes

Bigger, stronger, and more devastating – these three words are often used synonymously to describe the catastrophes of recent memory. What types of catastrophes have you seen in your insurance claims? Whether the result of a wildfire, tornado, flood, or hurricane, these catastrophes are not a new phenomenon, but rather are getting more intense and more frequent and more costly. According to NOAA, “2019 marked the ninth consecutive year with eight or more billion-dollar disasters and was the fifth consecutive year in which 10 or more billion-dollar weather and climate disaster events affected the United States.” There were 14 separate billion-dollar weather and climate disaster events that impacted the US in 2018 and 14 separate billion-dollar weather and climate disaster events that impacted the US in 2019. (See attached handout for location and risk) Hurricanes Harvey and Irma made landfall within two weeks of each other.

By the Numbers

In 2020 (as of April 8), there have been 2 severe storm events with losses exceeding \$1 billion each to affect the United States. These events included 2 severe storm events, including the 248 tornadoes that impacted the states of Texas, Louisiana, Arkansas, Mississippi, Tennessee, Kentucky, Alabama, Georgia, North Carolina, South Carolina, and Virginia between January 26-28, 2020. The second was the tornadoes in Tennessee on March 2-3, 2020. We are anticipating that some of the other tornadoes in April 2020 will exceed 1 billion dollars in damage once the final numbers are in.

In the U.S. the average cost of damage from a severe storm event (such as a tornado) is \$2.2 billion dollars per event; flooding is \$4.6B; wildfire is \$5B; and hurricane is \$21.5 billion dollar per event. With these numbers, the design and construction industries are taking notice, as is the insurance world. Adapting to the “new norm” of weather events and climate change has defined the need for resilient and sustainable construction of tomorrow.

II. Overview of Indemnification

Indemnity is compensation paid by one party to another to cover damages, injury or losses. An example of an indemnity would be an insurance contract, where the insurer agrees to compensate for any damages that the entity protected by the insurer experiences. The amount of financial obligation depends on the policy limits and sub-limits. In our upcoming case studies, the Ordinance and Law policy limits become important:

- Ordinance and Law Coverage is for costs associated construction or repair of damaged buildings associated with additional changes due to laws, building ordinances, or regulations. One example would be the additional fasteners on a roof deck to meet the wind uplift requirements.

Risk Management within the insurance profession places a value on cost versus probable risk. The same is true for the design and construction profession. The building code mandates higher factors of safety on structures that represent a high risk to human life in the event of a failure (such as a shopping mall) and a lower factor of safety for buildings that pose a lower risk to human life in the event of a failure (such as a single family residence).

III. Is the current response “Penny-Wise and Dollar-Foolish?” ...Yes. And, no.

Case Study – The Under-designed Daycare Facility

Note 1: for round-table discussion with risk manager, claims professional, expert, and attorney.

Note 2: specific identifiable details have been omitted/changed from this discussion for privacy purposes.

A religious facility in the Southeastern US consisted of buildings and a majority of those buildings had multiple additions over the past few decades. One building had an addition approximately 20 years ago that increased the size of the building by a third and was now being used as a daycare/preschool.

The following outlines specific details related to the enclosed discussion:

- This building had a low-sloped (flat) roof with parapet.
- The drawings and specifications were not retained by the municipality or by the owner.
- The roof drain system had been modified several times but the latest was 20 years ago.
- The roof drain system evidenced current and previous clogs. The roof evidenced previous ponding water.
- A rain event overwhelmed the roof drain system and a portion of the roof collapsed.
- There were no injuries and all children were safe.
- The roof joists were found to be undersized for the gravity and rain loads.

What affect would the deficient design have on a standard property insurance policy with an ordinance and law sublimit?

Re-visiting the risk management and underwriting, should the carrier have performed destructive testing prior to underwriting to find the undersized roof joists?

Resiliency in the Code

The International Code Council (ICC) is the nonprofit association that is responsible for the model building codes (IBC) and standards used in the U.S. and throughout the world. The American Society of Civil Engineers publishes the ASCE 7 and is referenced by the IBC. ASCE 7 provides the MINIMUM design loads for buildings and other structures. These documents provide minimum criteria and loads that engineers are allowed to design to. There are several professional organizations that focus on improved resiliency by using either higher loading, construction detailing, or both. The ICC publishes the ICC/NSSA Standard for the Design and Construction of Storm Shelters (ICC 500). FEMA produces the FEMA P-361 Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms and the FEMA 543, Design Guide for Improving Critical Facility Safety from Flooding and High Winds. There are standards published by FEMA that account for a FM Global is widely known for its research and efforts in resiliency and insurance of commercial and industrial buildings. FM Global focuses on a wide range of failure sources: including, wind, hail, fire, flood, and earthquake.

The Insurance Institute for Business & Home Safety (IBHS) is an independent, nonprofit, scientific research and communications organization funded by property insurers and reinsurers. IBHS's focuses more on residential construction but also has guidelines and resources for commercial construction. IBHS's FORTIFIED Home has several levels of fortification or resiliency that focus on wind and hail and can include new construction as well as repairs and renovations. The most common is the FORTIFIED ROOF certification. The premise of a FORTIFIED roof system is stronger connections to keep the roof on, sealed seams to keep the water out, locked down edges to keep the wind out and impact rated shingles to defend the shingles. IBHS estimates the cost of a typical 1,500-3000 square foot roof is \$5,500 to \$12,000 and the cost of a FORTIFIED roof is \$7,000 to \$13, 500 so an increase 12.5%-27% for an enhanced roof system.

IV. The Cost of Fortification...Resiliency - Another Case Study

When does it make sense to rebuild to a higher standard and when can the owners claim negligence for a design to the building code but not for a resilient structure? Currently, the cycle is: Catastrophe. Claim. Rebuild. Repeat. The definition of insanity doing the same thing over and over and expecting a different result. As previously discussed, the risk to human life is greater for buildings where a larger number of people occupy such as a school as compared to a single-

family residence. Exploring creative claims and litigation that COULD arise, special attention needs to be paid to potential allegations of negligence by carrier, designer, and the contractor.

**Case Study - *Alexander v. Woodlands Land Development Co. L.P.*
325 F.Supp.3d 786 (S.D. Tex. 2018)**

Note 1: for round-table discussion with risk manager, claims professional, expert, and attorney.

During Hurricane Harvey, the storm drain system for a subdivision, comprised of 487 single family residences, did not remove sufficient flood waters to prevent the houses from flooding.

The following outlines specific details related to the enclosed discussion:

- The subdivision was constructed in a FEMA designated 500-year floodplain.
- Several feet of storm water were observed on the roads and in the houses during Hurricane Harvey.
- There were no additional specific building code provisions for buildings in a FEMA designated 500-year floodplain.
- Both the developer and designer had knowledge of a previous flood event occurred during October 1994 storm.
- Homeowners claim the developer and designer of the storm water system were negligent and violated the Texas Deceptive Trade Practices Act (DTPA) by failing to develop and build homes in a manner that put them outside of a 500 year to reduce the likelihood of flooding.
- Homeowners alleged the developers and engineering firms either followed no standards for determining the elevation of a house relative to its risk of flooding or used antiquated data as the rainfall during Hurricane Harvey was foreseeable.

Negligence/Errors and Omissions

Could there be negligence/E&O coverage? There are duties and obligations created by the courts applying common law which introduces the discussion of negligence. Applicable in this discussion is whether not designing to a higher standard based on known data would be defined as negligence or Errors and Omissions (E&O) [Professional Liability] – and where the negligence lands (i.e. who is responsible?).

Negligence is a legally defined term; negligence is a cause of action in Tort that must consist of specific elements including the following:

- one person owes a DUTY (legal obligation) to another;
- there was a BREACH in duty;
- the breach of duty was the actual and proximate CAUSE of harm
- the plaintiff suffered HARM as a consequence of the breach of duty.

Revisiting the estimated cost of resiliency: at what percentage does it make sense for the insured to bare the additional cost? What about the insurance carrier?

The 2018 IBC - Existing Building includes provisions that include a structure must be brought into compliance with the current flood code provisions if repairs, alterations, additions or improvements if the costs are 50% or more of the market value of the structure. These provisions have led to many structures being raised or demolished and rebuilt.

Risk Transfer

A review of an article written by Murtaugh Law revealed that under California Law, the question of who is potentially liable for injuries/damages arising from defects caused by a project's design depends on several factors. The article notes that, "California has a number of cases in which Courts have held that contractors that follow a project's plans and specifications without deviation are not liable for any damages caused by design defects. For example, in *Barnthouse v. California Steel Buildings Co.* (1963) 215 Cal.App.2d 72, the Court found that a grandstand was built by the general contractor in accordance with the plans and specifications that the general contractor was bound to follow because of their contractual obligation..." This discussion can serve as a reminder for contractors to construct what is specified, seek answers when something is not clear, and to avoid inference.

As stated previously, typical projects have a wide variety of interested parties starting with the owner and developer, with inclusion of architects, designers, design professionals, engineering professionals, contractors and/or construction managers, subcontractors, and material suppliers. Discussions between two parties can impart risk, effectively transferring the risk from one to the other. Contracts can require a higher level of design than the minimum level provided by the building codes and standards, which would affect the resiliency of the structure.

By contract, the owner and developer generally assume little responsibility and risk in the quality of the construction, with the disclaimer that they continue their roles and set boundaries; this effectively separates them from the design, construction, and material supply. Remaining detached and as a delegator, the risk of imparting opinions and direction is minimized from claims of E&O or negligence at a later date.

Design professionals (i.e. architects and engineers) are held to their contract as well as working within established industry standards; and thus, their standard of care. The standard of care is its own topic, it will be briefly touched on herein. Standard of care could include which level of design is used for redundancy and resiliency?

By contrast with design professionals, contractors have been less successful in the outcome of litigious cases of this nature. General contractors are required by contract to construct a building or structure in accordance with the contract, plans, and specifications.

Who bears the risk when a storm event occurs during construction?

Case Study – *Gemma Power Systems v. Exelon West Medway* 2019 WL 3162088 (S.D. N.Y. 2019)

Note 1: for round-table discussion with risk manager, claims professional, expert, and attorney.

Hurricanes Harvey and Irma hit during the construction of a dual-fuel power plant facility in Massachusetts. General contractor submitted change orders for each source of delay and increased costs, but the owner refused to sign off on the change orders and failed to pay the general contractor for the work it was required to perform.

The following outlines specific details related to the enclosed discussion:

- Changes to the scope of work, timing, and other provisions are to be agreed upon pursuant to the change orders.
- Some of the events encountered that negatively impacted construction were caused by force majeure events.
- As a result, attention should be paid to how this term is defined in the applicable construction contract and how risk is allocated as a result of such event.

V. Hindsight, Foresight, and Lessons Learned

Is the Past a Predictor of the Future?

The increase in education of all parties involved in construction is on the rise, with the end-game of minimizing existing and future risks. The intent is to learn from past mistakes and adopt what was learned into decisions made going forward.

What Does this Mean for Underwriting, Risk Managers, Claims Professionals, Experts, Attorneys?

Acknowledging the necessity for resilient construction is the first step in insurability of new roads, bridges, and buildings. Resilient construction can be designed to weather storm events and survive future, bigger events. The result is insurability of design and construction professionals on such projects coupled with the decreased risk in re-building after every wildfire or hurricane. Disruptive events may not be avoidable, but they can be better prepared for and managed. Risk management techniques and strategies are designed to identify risks and consider how best to protect against risks. Concepts like designing to a higher standard than the building code are often key components of comprehensive risk management systems. However, many companies fail to identify areas of high frequency exposure, high severity exposure, and address them proactively, or to consistently review or audit claims that do arise. This means they're not understanding the "big picture" for the company. A lot of the repeat loss cases can really be interpreted through the lens of a lack of comprehensive risk management. This underscores the need to educate from the top to bottom, front-end to back-end.