Dealing With Natural Disasters
Here Comes The Flood (Of Legal Issues)

2019 Annual Meeting | ABA Forum on Construction Law
APRIL 24-27, 2019
The Diplomat Beach Resort | Hollywood, Florida
Plenary 7

The Things I Wish I Had Known Before the Disaster

*Saturday, April 27, 2019*

ABA Forum on Construction Law 2019 Annual Meeting
Presenters

Tina Cydzik, P.E., LEED AP, ESi, Irvine, CA

William R. Broz, P.E., Exponent, Los Angeles, CA

Daniel R. Wireman, Cleveland Construction, Inc., Naples, FL

Session Coordinator/Moderator:

Andy Wyman, Wyman Legal Solutions, Boca Raton, FL
Introduction: Wildfires, Hurricanes, and Earthquakes
Definitions

National Wildfire Coordinating Group (NWCG) Glossary

Wildfire
“An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fire where the objective is to put the fire out (definition currently under review).”

Wildland
“An area in which development is essentially non-existente, except for roads, railroads, powerlines, and similar transportation facilitates. Structures, if any, are widely scattered.”

The Fire Triangle

Reference Temperatures

- Decayed wood ignition: 150°C
- Polypropylene melting point: 158-168°C
- Hay ignition: 172°C
- Ignition of various types of woods: 190-260°C
- Polypropylene ignition: 570°C
- Match: 600-800°C
- Wall masonry collapses: 760°C
- Candle flame: 600-1400°C
- Steel melting point: 1100-1600°C

Wildfire Landscape

2017 National Statistics
No. Fires: 71,499
Burned Acreage: 10,026,086


2018 National Statistics
Estimated $24 billion in damages (NOAA)

Source: Brady Dennis and Chris Mooney, Wildfires, hurricanes and other extreme weather cost the nation 247 lives, nearly $100 billion in damage during 2018, Washington Post, Feb. 6, 2019.
Wildfire Landscape

California – 2018

Total Burned Area: 1,671,203 acres
Total No. Fires: 7,571


Camp Fire

Civilian Fatalities: 86
Firefighter Injuries: 3
Total burned area: 153,336 acres
Structure Losses: 13,972 homes, 528 commercial structures, 4,293 other structures

Geography of Wildfire Risk

Forecast Fire Danger Class: 08-FEB-19


Observed Fire Danger Class: 07-Feb-19

Geography of Wildfire Risk

Fire Weather & Wildfire Season
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Floridians

Facing cat 5 hurricane

Facing sub freezing temps
Hurricane Season

June 1 through November 30

Especially August and September
Hurricanes

Predictable
Survivable
Deadly & Destructive
Hurricane Irma

8/30/17 – 9/12/17

134 deaths

$65 billion in damage
Earthquake Season
January 1 – December 31
Earthquakes Are Unlike Other Casualties

Infrequent and unpredictable
No seasonality
No evacuation planning for specific events
US Earthquakes ≠ California
Earthquakes Are Like Other Casualties

Can be mitigated by good planning
Post-disaster challenges similar to other disasters
Knowledge advances with each incident
Building codes are “fighting the last war”
Building Code Issues
Governing Laws

Building Codes are Primary
Model Codes – Nothing but Good Advice Until
Enabling Legislation
  E.g., Int’l Bldg Code
Not To Be Confused with Statutory Codes
  E.g., City of Los Angeles Bldg Code
What Does the Building Code Do?

If you follow it, the building shouldn’t kill the occupants
Preserves life and limb; safe egress
Building can be a complete economic loss
Northridge Moves the Needle
Buildings Got Stouter

Revamp of welded joints for structural steel
  Weren’t tough enough
Some Steel Members TOO Tough
  Little deflection; focused forces on welded joints
  Added cautions re high-strength steel
Design Loads Too Low
  Accelerations, deflections, dynamic loadings all increased
Focus on Moment Frame Construction

Moment-frame welded joints

EQ Force

W14 x 99

W24 x 103

W14 x 99

EQ Force

W14 x 26

W14 x 99

W14 x 26

W14 x 99

Braced Frame

Moment Frame
Hurricane Building Code Changes

Hurricane Andrew

The Florida Building Code

Hurricane Michael
Wildfire Building Code Changes?

Changes in building materials

Development planning

Structure “hardening”
Other Legal Considerations
Life Safety Regulations

Rehabilitation Center at Hollywood Hills
(6.5 miles away from here)

12 Nursing Home Residents Died

New Rules for Alternative Power
Unreinforced Masonry

• About 1,000 left in LA despite mandatory retrofit

• More flexible construction can displace but not fail, transmitting loads to the weak masonry
Earthquake Calamities Waiting to Happen

• Typical Los Angeles “Dingbat” Apartment

• Soft-story construction – no lateral resistance at ground level

• Many still left in LA
Not Just The Building Structure
Building systems support and flexibility

Typical “swing” joint for sprinkler piping – crossing a structural seismic joint
Wildfires

Challenges obtaining insurance in some fire-prone areas

Bankruptcy of P.G.&E.
Preparing for the Future Based on Past Disasters
Know Your Risks

How to Evaluate Wildfire Risks to a Project Site
Risks

Liability - Causing a Wildfire

Direct Fire Impacts

Business Interruption
Mapping the Hazards

Source: Google Earth Professional, historical aerial photo of Irvine, California dated June 8, 2018 (last visited Feb. 24, 2019).
Fire Authority with Jurisdiction?

Fire Authority with Jurisdiction?

Fire History

Fire History

Earthquake Planning
Must-Do’s

Investigate and act on seismic vulnerabilities
Plan the (disaster-related) work; work the plan
Place repair contracts as early as possible
Be prepared for overextended suppliers, banks and carriers
Maintain a prudent cash position
Prep for re-constitution of production outside affected zone
Loop the lessons learned into the planning cycle for the next “big one” – it is a matter of when, not if
Hurricane Preparation

Preparing Your Company

Preparing Your Jobsite

Preparing Your Law Practice
Practical Lessons Learned
Wildfire Lessons Learned & Discussion

Need for preparation & emergency planning
Understanding of how fires start
Safety & evacuation
Mitigation measures
Reduce risks and liability
Insurance
Earthquake: Surprises for Building Owners and Tenants

Demand-driven increases in material costs
Unavailability of qualified general contractors; sole- or no-bid
Restrictions on short-term loans due demand for cash
Delays in funding from insurance
Unavailability of basic goods
Bottlenecks in inbound and outbound logistics
Loss of key staff
Lessons Learned From Irma

1. Global Planning is Essential

2. Massive Supply Chain Disruption

3. The Emotional Impact is Significant
Conclusory Remarks