DEALING WITH NATURAL DISASTERS
Here Comes The Flood (Of Legal Issues)

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The Hurricane is Coming in Five Days- Are We Ready for This?

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Re-Writing of Building Codes for New Construction

- Uniform Codes with Statewide Application
- Minimum Standards for Wind Resistance
- Minimum Standards for Impact Resistance
No Statutory/Uniform Standards for Protection of Ongoing Projects
Absence of Uniform Standards

• Owners and Contractors have wide discretion for hurricane preparedness

• Efficacy of plans vary widely from non-existent to thoughtfully detailed and executed
Why Have a Plan?

- 93 named storms between 2010 and 2015
- 41 named hurricanes
Huge Property Damage

- Katrina and Harvey – Each caused 125 billion in damages
- Maria – 91 billion and counting
- Michael – Over 7 billion
It’s Not Just Property Damage

• Changed Conditions
• Delays in Construction
• Material shortages
• Labor shortages
Preparedness Plan

• What you need to know about Hurricanes

• What you need to know about impacts to ongoing projects
Nature of the Beast

• Atlantic Hurricane Season – June 1 to November 30
• Central Pacific Basin – June 1 to November 30
• Eastern Pacific Basin – May 15 to November 30
Nature of the Beast - Geography

Hurricane and Tropical Storm Frequency: 1851-2012

- 65-141
- 29-64
- 1-28
- No Hurricanes

*Atlantic data from 1851-2012, Pacific data from 1949-2012
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Nature of the Beast - Geography
Nature of the Beast - Time

Tropical storm and hurricane frequency
Atlantic region

Monthly average

- Tropical Storms
- Hurricanes
- Both (total)

Based on data from 1851-2017
Nature of the Beast - Wind

Saffir-Simpson Hurricane Wind Scale

Types of damage due to Hurricane winds
Source: US National Hurricane Center

1. **Category 1**
   - Winds of 119 to 153 kilometers per hour.
   - Dangerous: Damage to poorly constructed homes; large tree branches will snap and shallowly rooted trees may be toppled.

2. **Category 2**
   - Winds of 154-177 kph.
   - Extremely dangerous: Damage for roofs, windows, walls; shallow-rooted trees blown down; severe power outages.

3. **Category 3**
   - Winds of 178-205 kph.
   - Devastating: Damage to building structures; many trees uprooted; flooding near coastal areas; power and water shortages.

4. **Category 4**
   - Winds of 209-251 kph.
   - Catastrophic: Roofs and walls collapse; most trees and power lines destroyed; flooding; areas up to 10 kilometers from coast evacuated.

5. **Category 5**
   - Winds of 252 kph or higher.
   - Utterly catastrophic: Buildings destroyed; roofs torn off; floods; areas up to 16 km from coast evacuated.

Graphic by Nam Kyung-don
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### Saffir-Simpson Hurricane Scale

<table>
<thead>
<tr>
<th>Category</th>
<th>Wind speed (mph)</th>
<th>Wind speed (km/h)</th>
<th>Storm surge (ft)</th>
<th>Storm surge (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>≥156</td>
<td>(≥ 250)</td>
<td>&gt;18</td>
<td>(&gt; 5.5)</td>
</tr>
<tr>
<td>4</td>
<td>131 – 155</td>
<td>(210 – 249)</td>
<td>13 – 18</td>
<td>(4.0 – 5.5)</td>
</tr>
<tr>
<td>3</td>
<td>111 – 130</td>
<td>(178 – 209)</td>
<td>9 – 12</td>
<td>(2.7 – 3.7)</td>
</tr>
<tr>
<td>2</td>
<td>96 – 110</td>
<td>(154 – 177)</td>
<td>6 – 8</td>
<td>(1.8 – 2.4)</td>
</tr>
<tr>
<td>1</td>
<td>74 – 95</td>
<td>(119 – 153)</td>
<td>4 – 5</td>
<td>(1.2 – 1.5)</td>
</tr>
</tbody>
</table>

### Additional classifications

| Tropical storm | 39 – 73 (63 – 117) | 0 – 3 (0 – 0.9) |
| Tropical depression | 0 – 38 (0 – 62) | 0 (0) |
Storm Surge

• Katrina (Cat 4) – 28’ Storm Surge
• Ike (Cat 2) – 20’ Storm Surge
• Charley (Cat 4) – 6-8’ Storm Surge
Construction Sites

- Incomplete and temporarily supported structures
- Unfinished building envelopes
- Loose materials and equipment
- Shored floors and walls
Storms in Rapid Succession
Material & Labor Shortages

NEW HOME CONSTRUCTION STARTS IN GREATER HOUSTON AREA

- April-June 2017: 7,557
- July-Sept. 2017: 7,930
- Jan.-March 2018: 6,693
The Plan

• Make it a collaborative Effort
  • Owner/operations
  • Design Professionals
  • Contractors
  • Key Subcontractors
The Plan

• Make it project specific
  • Type of Construction
  • High Wind Zone?
  • Proximity to Ocean?
  • Storm Surge
• Time of Year
Plan Checklist

• Name Key Players
• Designate Lead
• Develop Communications Plan
Plan Checklist

• Project Access
Plan Checklist

• Insurance
  • Assure adequate coverage in place
  • Avoid pre-storm blackout periods
  • Use carrier as resource
With peak wind speeds that exceed 186 mph, hurricanes can cause catastrophic damage to structures under construction. With correct planning, you can protect your construction site and mitigate potential damage from this extreme-weather event.

Engineering and construction firms that operate in the "hurricane belt" are acutely aware of the hazards that hurricanes pose to construction sites, with their incomplete structures, expansive machinery, and equipment materials and finishes that are easily damaged by water, flood-prone excavations, and building materials such as lumber, sheathing, and piping that can quickly become projectiles in high winds. However, contractors often make the mistake of waiting to "batten down the hatches" until a hurricane is imminent, with inadequate time to protect the project.

Endorsed in this information kit are documents to aid in preparing a Hurricane Action Plan that can help you protect your construction site from this storm aware.

These materials were compiled by Allianz Risk Consulting (ARC) risk specialists, based on extensive years of consultation with construction and engineering firms that operate in hurricane-prone regions. This information kit provides general information and recommendations that may apply to many different situations. Any recommendations described in this information kit are not intended to be specific to your unique situation. Consult with your staff and specialists to determine how and whether the information in this information kit might guide you in developing specific plans and procedures for your operations. This information kit does not substitute for legal advice, which should come from your own counsel.
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Plan Checklist

• Protect Materials
  • Lumber
  • Steel
  • Piles of gravel, aggregates or fill
  • Drywall
  • MEP
Plan Checklist

• Protect Materials
  • Stop/suspend deliveries
  • Address post-storm price hikes
  • Diversion of materials for storm damage repairs
  • Drywall/roofing/windows
Plan Checklist

• Protect Papers and Data
Plan Checklist

• Protect incomplete excavation and earthwork
Plan Checklist

• Environmental Concerns
Legal Implications

• Force Majeure Clauses
  • Relieves parties from liability for events outside their control
  • Should not relieve parties from liability for damages caused by the failure to implement hurricane preparedness plan
Legal Implications

• Force Majeure Clauses
  • Clearly define trigger events
    • “Named Storms”
    • “Tropical Storms”
    • “Hurricanes”
Legal Implications

- Force Majeure and Delays
  - No damage for delay clauses
  - Limitation on no damages for delays
  - Impossibility of performance?
Legal Implications

• Price Escalation Clauses

• The parties acknowledge that current market price conditions for certain building materials, products, equipment and systems may change during the course of the Project for reasons outside the control of the parties. Notwithstanding anything in the Contract Documents to the contrary, the parties agree that should prices on the building materials, products, equipment or systems listed on attached Exhibit __ escalate by more than ___% as to any listed item from [date] to the date such items are actually purchased by Contractor for the Project, Contractor shall be entitled to a Change Order equitably increasing the [GMP/Contract Sum/Contract Price] by the amount the price escalation exceeds said ___% per item.
Legal Implications

- Notice Requirements
- Generally enforceable
- Public bodies/sovereign immunity
Legal Implications

• Document Losses
  • Videos/photographs/samples
  • Cost of safety and damages inspections
  • Debris removal
  • Demolition costs
  • Repairs to damage property, including equipment
  • Overtime wages
  • Transportation
  • Additional permitting costs
Legal Implications

• Insurance

• Builders Risk

• Policy extensions for:
  • Building materials
  • Property replacement
  • Debris removal
  • Increased labor costs
  • Temporary structures
Legal Implications

• Builders Risk – Beware the Exclusions

  • Fault, defect, error, deficiency or omission in design, planning or specification

  • Faulty or defective workmanship, supplies or material

• Ensuing or resulting loss
End