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**AIA CES INFORMATION**

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**Taking the Lead to Address Climate Change**

Credit: 1.0 Learning Unit (HSW)

Provided by: Victor US

Provider Number: K048

Course Number: VOS660-DE

The speaker is: Yvonne Castillo

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**REPORTING YOUR PARTICIPATION**

- Certificates of Completion are available for downloading from the link provided immediately following the program.
- This course is registered with AIA CES for continuing professional education credit. As such, it does not include content deemed or construed to be an approval or endorsement by the AIA.
- You will receive a satisfaction survey following the program and if you are an AIA member and provide a valid AIA membership number, your participation will be reported to AIA CES for AIA members.
- Others will self-report.

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### AGENDA

-  **Part I: Overview of Climate Challenges for Design Firms**  
(a) Adapting the built environment to changed climate (resiliency)  
(b) Mitigating worsening impacts (decarbonization)
-  **Part II: Professional & Business Risks**  
Understanding your risks
-  **Part III: Risk Management**  
Strategies for managing your exposures and liability

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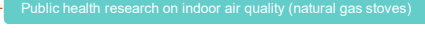
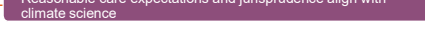
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### LIABILITY LANDSCAPE HAS CHANGED

-  New Scientific Conclusions Released on Climate
-  Costs of technologies have improved significantly
-  Public health research on indoor air quality (natural gas stoves)
-  Reasonable care expectations and jurisprudence align with climate science

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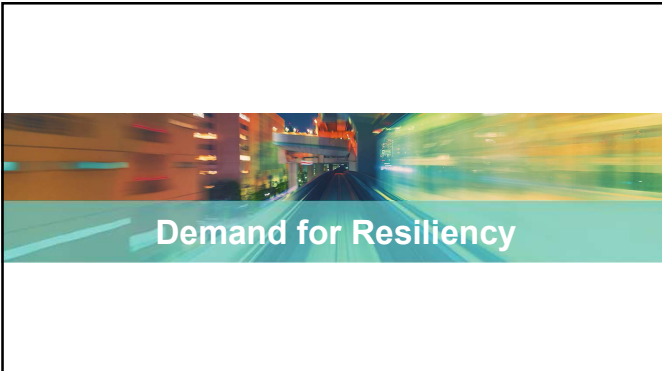
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**Demand for Resiliency**

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### RECENT HISTORY IN US: NATURAL DISASTERS

Costs to US 2016-2020\*

DISASTER TYPE	EVENTS	EVENTS/YEAR	PERCENT FREQUENCY	TOTAL COSTS	PERCENT OF TOTAL COSTS	COST/EVENT	COST/YEAR	DEATHS	DEATHS/YEAR
Drought	4	0.8	4.9%	\$14.9B <sup>(R)</sup>	2.3%	\$3.6B	\$2.9B	45 <sup>(I)</sup>	9 <sup>(I)</sup>
Flooding	9	1.8	11.1%	\$42.8B <sup>(R)</sup>	6.8%	\$4.8B	\$3.8B	86	17
Freeze	1	0.2	1.2%	\$1.1B <sup>(R)</sup>	0.2%	\$1.1B	\$0.2B	0	0
Severe Storm	43	9.0	55.6%	\$96.7B <sup>(R)</sup>	15.3%	\$2.1B	\$19.3B	158	32
Tropical Cyclone	15	3.0	18.5%	\$401.8B <sup>(R)</sup>	63.8%	\$26.8B	\$80.4B	3,419	684
Wildfire	5	1.0	6.2%	\$69.8B <sup>(R)</sup>	11.1%	\$14.0B	\$14.0B	230	46
Winter Storm	2	0.4	2.5%	\$3.5B <sup>(R)</sup>	0.6%	\$1.8B	\$0.7B	31	6
All Disasters	81	16.2	100.0	\$639.2B <sup>(R)</sup>	100.0%	\$7.8B	\$126.0B	3,969	794

\*Deaths associated with drought are the result of heat waves. (Not all droughts are accompanied by extreme heat waves.)  
 Flooding events (river basin or urban flooding from excessive rainfall) are separate from inland flood damage caused by tropical cyclone events.  
 The confidence interval (CI) probabilities (75%, 90%, and 95%) represent the uncertainty associated with the disaster cost estimates. Monte Carlo simulations were used to produce upper and lower bounds at these confidence levels (Smith and Matthews, 2013) (R).  
 NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021) <https://www.ncdc.noaa.gov/billions/>; DOI: 10.2592/1366-7673

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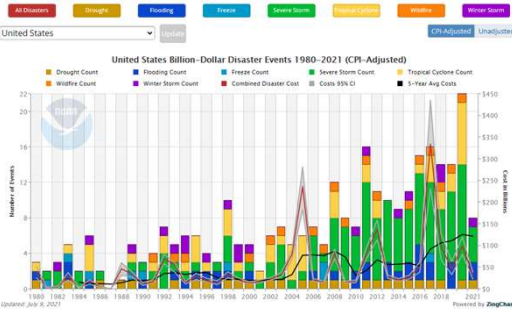
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### 2021: NATURAL DISASTERS

First 6 Months of 2021



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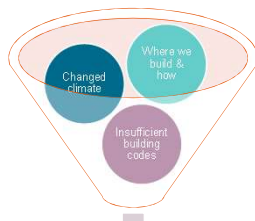
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### WHY ARE NATURAL DISASTERS INCREASING IN FREQUENCY?

National Oceanic and Atmospheric Administration

- Are U.S. billion-dollar disasters increasing in frequency and cost?
- Yes, the number and cost of disasters are increasing over time due to a combination of increased exposure (i.e., values at risk of possible loss), vulnerability (i.e., where we build; how we build) and that climate change is increasing the frequency of some types of extremes that lead to billion-dollar disasters. More specifically, these trends are further complicated by the fact that much of the growth has taken place in vulnerable areas like coasts and river floodplains. Vulnerability is especially high where building codes are insufficient for reducing damage from extreme events. Climate change is also playing a role in the increasing frequency of some types of extreme weather that lead to billion-dollar disasters – most notably the rise in vulnerability to drought, lengthening wildfire seasons in the Western states, and the potential for extremely heavy rainfall becoming more common in the eastern states



<https://www.ncdc.noaa.gov/billions/faq>

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**IPCC REPORT\_6TH ASSESSMENT**  
August 2021



**Code Red for Humanity**

- That human-caused emissions have warmed our climate
- That global surface temps have increased faster since 1970 than in any other 50-year period over at least the last 2000 years
- That sea level has risen faster since 1900 than over any preceding century in at least the last 3000 years

**“Unstable”**

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**IPCC\_REGIONAL FACT SHEETS**  
North America\_US – common themes



- “expected” “virtually certain”
- “high confidence”
- “expected” “medium confidence”

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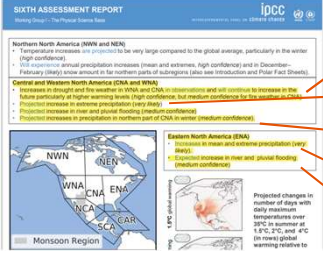
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**IPCC\_REGIONAL FACT SHEETS**  
North America\_US – sub regions in the U.S.



- “high confidence” (Western US) for drought/fire weather with “medium confidence” for fire weather (Central US)
- Extreme precipitation “very likely” (Western and Central US)
- “medium confidence” for projected increases in flooding and precipitation (Western and Central)
- “very likely” increases in precipitation (Eastern US)
- “medium confidence” for expected increase in flooding (Eastern US)

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## Buildings

Scale & Scope of Opportunity\*

\*American Council for an Energy Efficient Economy

- Consume 3/4 of electricity used in the US
- Account for 40% of primary energy use and corresponding ghg emissions
- And current footprint is going to double by 2060

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**HEALTH EFFECTS FROM GAS STOVE POLLUTION**  
2020



2020 | By Brady Seals, Andee Krasner

[DOWNLOAD THE REPORT BELOW](#)

**Health Effects from Gas Stove Pollution**

While Mountain Institute, Physicians for Social Responsibility, Mothers' Out Front, Sierra Club, and the National Health Institute of Home and Apartment Air Quality have been leading the charge on indoor air pollution, not only a threat to climate action but also to human health, in these appliances are sources of indoor air pollution. Gas stoves, particularly when unvented, can be a primary source of indoor air pollution. Our new, in-depth body of scientific research shows the pollutants released by gas stoves can have negative health effects, often exacerbating respiratory conditions like asthma.

Despite this growing body of evidence, indoor air pollution remains largely unregulated. In this report, we synthesize the best available science to outline the health risks associated with gas stoves. Air pollution is preventable, and we hope this report can spur the necessary action to protect public health.

Indoor Air Pollution: The Link between Climate and Health by Brady Seals

Click the "Download" button above for a PDF of the full report. The infographics below are also available for download.

**Gas Stoves Can Emit Elevated Indoor Nitrogen Dioxide (NO<sub>2</sub>) Levels Often Exceeding Indoor Guidelines and Outdoor Standards**

<https://rmi.org/insight/gas-stoves-pollution-health/>

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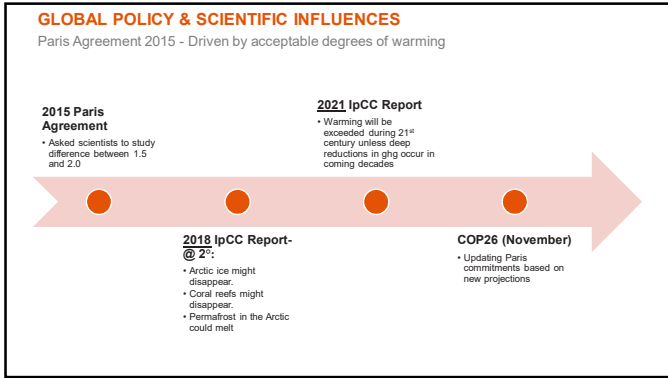
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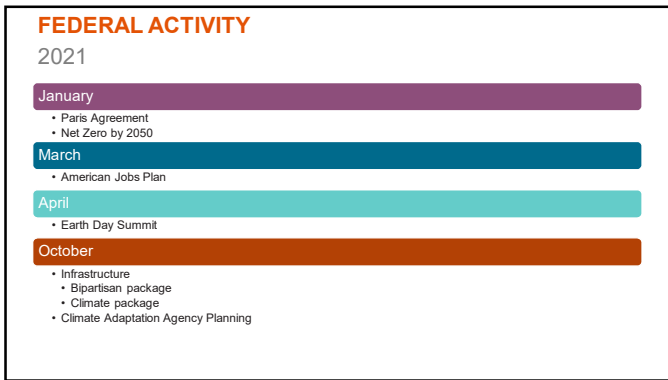
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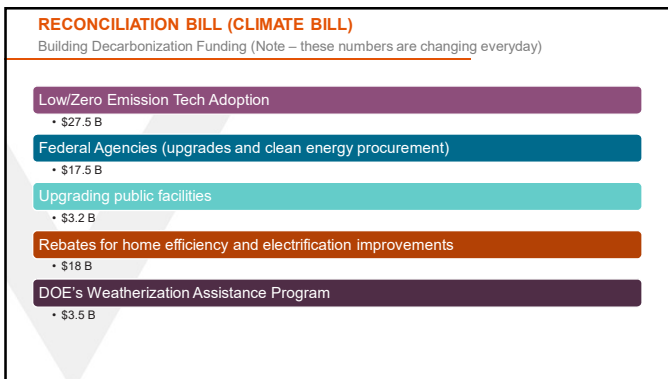
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**FEDERAL INFRASTRUCTURE PROGRAMS/FUNDING**  
How Proposed Federal Programs Non Profit Programs Balance Supply-Demand

**CEPP**

- Incent electric suppliers to increase carbon-free energy each year

**National Green Bank**

- Public private partnership funding, financing and risk-sharing model for climate-friendly

**Electrify-everything efforts**

- Focused on residential
- Aimed at replacing 1 billion machines in American households with electric heat pumps

<https://victoriskmanagement.blog/2020/09/29/why-a-national-climate-bank-matters-for-the-design-industry/>

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**RECENT FEDERAL AGENCY ACTIVITY**  
October 7, 2021

**FACT SHEET: Biden Administration Releases Agency Climate Adaptation and Resilience Plans from Across Federal Government**

<http://www.sustainability.gov/adaptation>

Today, the Biden White House Administration released plans developed by more than 20 federal agencies that outline the steps each agency will take to ensure their facilities and operations adapt and are increasingly resilient to climate change impacts. The plans reflect President Biden's whole-of-government approach to addressing the climate crisis as agencies integrate climate resilience across their missions and programs and strengthen the resilience of federal assets from the underlying impact of climate change. The climate adaptation and resilience plans were previously submitted to and reviewed by the National Climate Risk Board, White House Council on Environmental Quality's (CEQ) Federal Chief Sustainability Office, and the Office of Management and Budget (OMB) in response to President Biden's Executive Order on Tackling the Climate Crisis at Home and Abroad.

Agencies face a multitude of risks caused by climate change, including rising costs to maintain and repair damaged infrastructure from more frequent and

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**STATE & LOCAL POLICY**  
Renewable & Clean Energy Standard Policies

**30 States + DC have a Renewable Portfolio Standard. 5 states have a Clean Energy Standard.** 6 states have renewable portfolio goals, 3 states have clean energy goals.

- Renewable portfolio standard
- Clean energy standard
- Renewable portfolio goal
- Clean energy goal
- \* Extra credit for solar or customer-led renewables
- † Includes non-renewable alternative resources

©2021, Victor US

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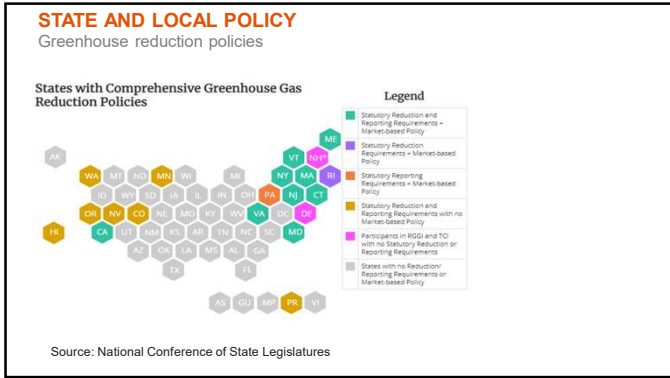
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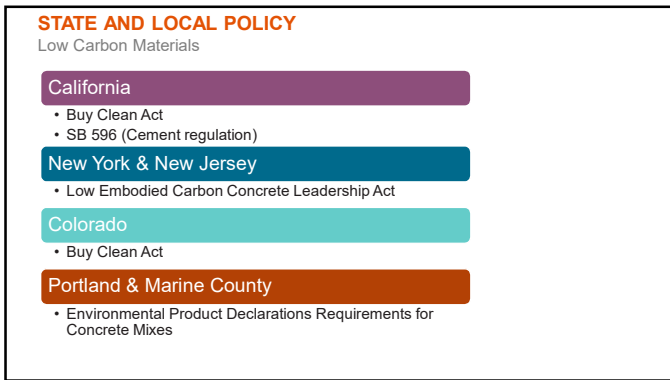
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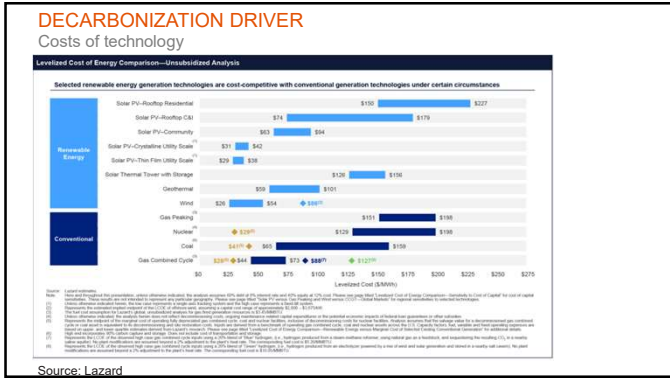
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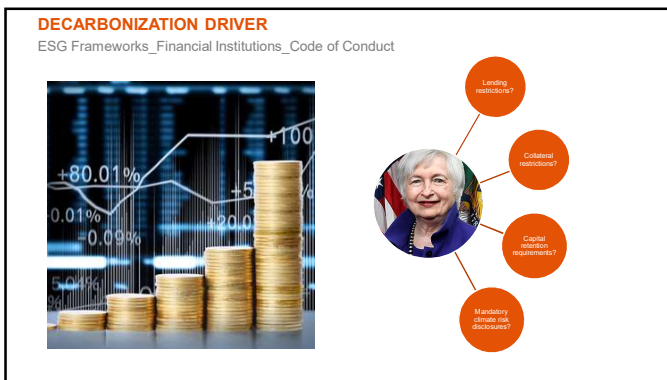
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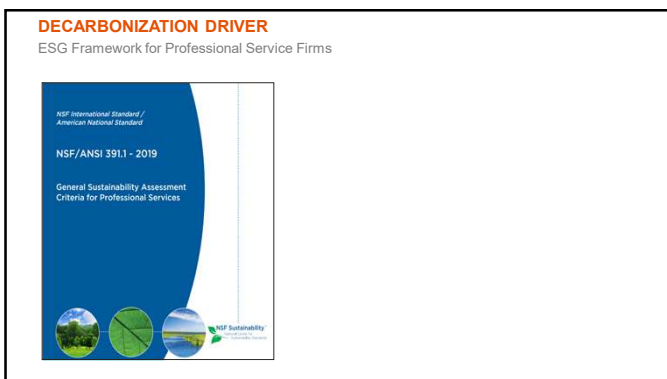
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**DECARBONIZATION DRIVER**  
Codes & Standards\_Decarbonization Code Overlay by NBI (August 2021)



- Covers commercial and residential properties
- Compatible with IECC (2021) and ASHRAE 90.1 Standard
- Focused on new construction only

- Two pathways:
  - All-electric construction
  - Electric-ready (to facilitate easier future retrofit of fossil-fueled machines into electric-only)
- Enables code solutions for other key grid-integrative technologies (solar, electric vehicles, storage, and demand response)

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**Understanding My Risks**

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**RISK LANDSCAPE**  
Climate Change & Architecture Firms



- Claims/Liability Risks
- Reputation Risks
- Strategic Risks

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**FUNDAMENTAL PREMISE**

Standard of Care\_Reasonableness

It is a duty to exercise the degree of learning and skill ordinarily possessed by a reputable design professional practicing in the same or similar locality and under similar circumstances.

-  Am I pushing my firm and my practice enough on climate changes in my region?
-  Am I keeping up with other firms and their practice?
-  Have I met with leaders in my firm to discuss how we're going to help clients adapt their projects to a changed climate?

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**NCARB MODEL LANGUAGE**

Code of Conduct

Architect's **primary** duty is to protect the **public's** health, safety, and welfare. In discharging this duty, an architect shall act with reasonable care and competence, and shall apply the knowledge and skill ordinarily applied by architects in good standing, practicing in the same locality.

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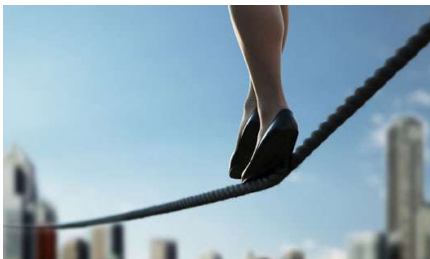
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**TIGHT ROPE**

HSW of the Public v. Client's Desire to Invest




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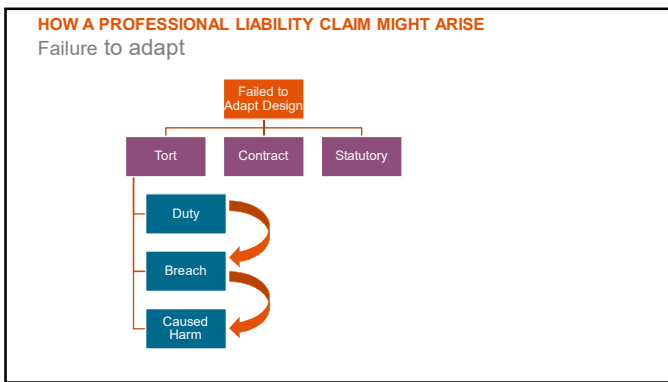
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**FUNDAMENTAL PREMISE**  
Standard of Care

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*The standard of care for all professional services performed or furnished by Consultant under this Agreement will be the **skill and care** used by members of Consultant's profession practicing under **similar circumstances** at the **same time** and in the **same locality**.*

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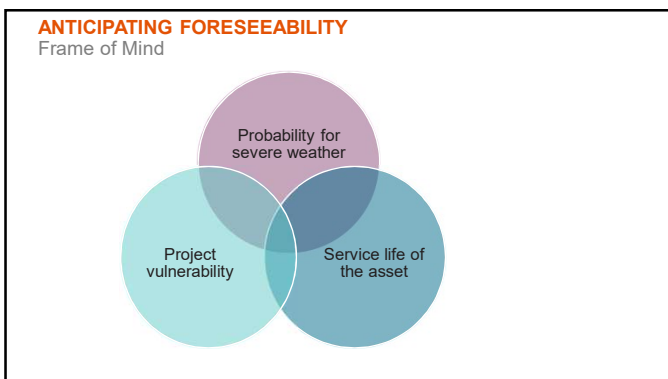
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**FORESEEABILITY ANALYSIS**

- News/Industry Literature/Industry Meetings and Conferences
- Technology availability, costs, design strategies that could have been implemented
- Scientific reporting
- What other architects were doing to adapt
- Code requirements

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**A CASE IN POINT...DEFENSE OF 'INDUSTRY CUSTOM' REJECTED**  
 The T.J. Hooper Case (1932)



*"Indeed in most cases reasonable prudence is in fact common prudence; but strictly it is never its measures; a whole calling may have unduly lagged in the adoption of new and available devices. It never may set its own tests, however persuasive be its usages. Courts must in the end say what is required; there are precautions so imperative that even their universal disregard will not excuse their omission."*

Source: American Museum of Tort Law

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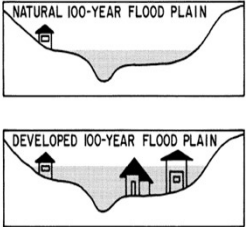
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**FORESEEABILITY OF HARM**



**LH Bell & Associates v. Granger (1975)**  
 The Court found the engineer negligent in design of a bridge and liable for damages to a 3<sup>rd</sup> party who owned adjacent property that was flooded because the design "failed to consider and protect against foreseeable flooding of adjacent properties."

**BUILDING ON FLOOD PLAINS INCREASES THE RISK OF FLOOD HAZARDS**

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**PENDING LITIGATION**

Foreseeability




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**LIABILITY THROUGH CONTRACTUAL EXPOSURE**

What does your contract say?

**Standard of care?**

- Are you agreeing to perform the work with skill and care as other members of the profession practice in the same locality under similar circumstances?

**Scope of Services?**

- Is the scope written **broadly** enough to imply that your services include an analysis of climate impacts? Or is the scope written **specifically** with phrases that include environmental assessments, environment impacts?

**Provisions to indemnify owner?**

- Are you agreeing in your contract to indemnify the owner for injury or property suffered by third parties as a result of your failure to perform design services in accordance with the standard of care?

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**HOW TO MITIGATE YOUR LIABILITY EXPOSURES**

Some ideas...

**1. Communicate and document hazard mitigation issues**

- What happens if operations cease because of a flood or power outage?
- What if critical facilities/infrastructure are impacted in storm or fire?
- What if critical personnel cannot access the building or cannot communicate?
- What if your critical information, communication and technology are impacted?
- How long can you go without revenue? Do you have contingency funds for repairs that would be needed?
- Does the building house people? If so, think through shelter in place conditions during a disaster and harms to tenants/occupants? Where will these people live during the repairs?

**2. Be ready to decline work, if necessary**

**3. Carry good insurance**

**4. Scrutinize your contract language**

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**CONTRACTUAL PROTECTIONS**

Informed Consent

*The Design Professional will design in compliance with existing codes and regulations in place and applicable to the design services at the time the design is prepared. Project Owner understands that the Design Professional cannot anticipate changes in the project's site or environment unless the Project Owner specifically has those possible changes analyzed by a consultant and contractually requires that the changes be considered during the design stage of the project. Project Owner recognizes that the Design Professional has a right to rely on the information provided through the Project Owner by the Project Owner's consultant.*

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**CONTRACTUAL PROTECTIONS**

Disclaimers

*During the Project design, Design Professional shall examine current codes and standards and shall use professional skill and care to design Project to meet the requirements of current codes and standards identified as applicable to the Project. Design Professional by training and experience does not possess the expertise to assess the effects of climate change or extreme climate events not addressed by current codes and standards on the Project and assumes no responsibility beyond the professional skill and care in designing to current codes and standards.*

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**CONTRACTUAL PROTECTIONS**

Waivers

*Because disruptive climate events are unforeseeable at the time this contract for services was negotiated, Project Owner agrees that it will waive any claim against the Design Professional related to climate events that exceed those addressed by existing codes and standards.*

*Project Owner waives all consequential damages caused by disruptive climate events that are not identified in the contract as needing to be addressed by the Design Professional. Consequential damages include but are not limited to loss of use, income, profit, financing, business or reputation.*

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**CONTRACTUAL PROTECTIONS**

Limitation of Liability

*Project Owner limits the Design Professional's liability to the Project Owner and anyone claiming through the Project Owner for costs, losses, or damages resulting from changes in the environment and site that exceed existing and applicable codes and are not identified at the time of the design as design parameters. Design Firm's sole liability will be based on actual damages to the extent caused by the Design Firm's failure to design to existing and applicable codes.*

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**CONTRACTUAL PROTECTIONS**

Contractual Indemnity Obligation

*In recognition of Project Owner's decision to have Design Professional design only to existing codes and standards, Project Owner agrees to defend Design Professional against any third-party claims alleging harm caused by Design Professional's failure to design to climate events not addressed by existing codes and standards and to indemnify Design Professional for any costs, losses, or damages to Design Professional resulting from such allegations.*

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**CONTRACTUAL PROTECTIONS**

Prohibition of Third-Party Beneficiaries

*Services provided by the Design Professional are solely for the Project Owner's benefit and no third party is granted the right to rely on the design services provided by Design Professional.*

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**PROFESSIONAL LIABILITY INSURANCE**  
Victor Policy

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**III. DEFINITIONS**

*Professional services mean those services that the Insured, or any person or entity, including joint ventures, for whom the Insured is liable, performs for others on behalf of a Named Insured in the Insured's practice as an architect, engineer, interior designer, land surveyor, LEED® green building program consultant, landscape architect, construction manager, scientist, or technical consultant.*

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**CONCLUSION: WE'VE BEEN HERE BEFORE**  
Economic Transitions

**WE ARE HERE**

- Institutionalize climate risk management
- Proactively flag risks
- Shift risks to those who can control them

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**VICTOR SCHOOL OF RISK MANAGEMENT**  
<https://www.victorinsurance.com/school-of-risk-management/>

**School of Risk Management**

- NEW Victor Contract Sifter**: Instantly only access to all approved contract review tool. Look out for an email from Victor Contract Sifter on your account.
- Continuing Your Education**: Online learning & continuing education.
  - Enroll
  - Learn More
- Tools & Resources**: Tools and resources to help manage your projects and run your firm.
  - Managing Your Projects
  - Running Your Firm
- News & Events**: Webinars, industry events, blog, press and more!
  - Discover More

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**OTHER RESOURCES**

AIA Resilience and Adaptation Online Series

AIA 2030 Online Series

Embodied Carbon 101 Series

AIA Trust Resources

BuildingScienceFightClub.com

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**THANK YOU**

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