We'll be starting in just a few minutes….

Tell us…

What topics are you interested in for future webinars?

Please send your response to the webinar organizers via the question box.
Finance and Resilience Initiative Part 1: Building the Business Case for Resilience

April 21, 2020
3:00 – 4:00 pm EDT
Joe Indvik
RE Tech Advisors
Sector Lead, Better Buildings Financial Allies
Agenda

1. Reviewing the business case: Financial implications of climate risk and resilience in 2020
2. Introducing the DOE Resilience Roadmap
3. Insights from the field
4. Q&A
Takeaway:
Practical tools to help commercial buildings measure, manage, and mitigate climate and resilience risk.
Recent Weather and Climate Disasters

[Map of U.S. 2017 Billion-Dollar Weather and Climate Disasters]

Finance and Resilience Initiative
Finance and Resilience Initiative

Goal:
Bring together experts and emerging best practices to help building owners measure, manage, and mitigate resilience risk. Focus on energy and climate, with other areas considered.

Activities:
• Roundtable of industry experts from CRE, finance, and insurance industries
• Develop actionable resources
• Share insights with the market

Steps Toward Resilience

- Measure Risk
- Build the Business Case
- Manage Insurance Risk
- Finance & Implement Improvements
- Disclose Resilience Performance
- Create a Resilience Plan

Resilience Roadmap
The Spectrum of Climate Risks to Commercial Buildings

PHYSICAL DAMAGE  INSURANCE PREMIUM REPRICING  TAX INCREASES TO FUND INFRASTRUCTURE  INVESTMENT LIQUIDITY REDUCED  ECONOMIC & DEMOGRAPHIC DAMAGE  ABANDONMENT OF RISKIEST/LEAST-RESILIENT LOCATIONS

Source: Heitman on “Future Proofing Real Estate Investment: How Industry Leaders are Factoring in Climate Risk” (ULI Webinar)
Impacts of Climate Risks on Commercial Building Financial Statements

**Balance Sheet**

- **Assets**
  - Current Assets
  - Property, Plant, Equipment
  - Investments
  - Intangible Assets

- **Liabilities**
  - Current Liabilities
  - Long-Term Liabilities

- **Decrease in valuation for vulnerable and inefficient properties**
- **Limited liquidity**
- **Need for additional equipment (e.g. backup generation, redundant servers)**
- **Potential for total asset loss**
- **Decline in goodwill and brand identity in the event of loss**
- **CapEx or financing required to repair or improve assets**
- **Stricter terms from lenders for at-risk assets**
- **Decrease in asset marketability to tenants**
- **Property downtime**
- **Local market decline leading to vacancies**
- **Abandonment risk**
- **Increased operating costs to maintain redundancy**
- **Vulnerable properties also tend to have high energy costs**
- **Increase in insurance premiums**
- **Inability to get risky assets insured**
- **Requirement for new types or levels of coverage**
- **Tax increase to fund climate adaptation, mitigation, and disaster recovery**
- **Increased compliance cost due to resiliency regulation and code changes**

**Income Statement**

- **Income**
  - Rental Income
  - Other Income

- **Expenses**
  - Operations & Maintenance
  - Insurance
  - Marketing
  - Taxes & Compliance
  - Other Expenses

- **Decrease in asset marketability to tenants**
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Source: DOE Resilience Roadmap
Key Trends as of Q2 2020

Connecting Resilience and Financial Performance

Market Pressure and “Mainstreaming” of Resilience

Energy Performance Drives Resilience
Resilience Roadmap is Now Live on the Solutions Center

Steps to Resilience

1. Building the Financial Business Case for Resilience
   This fact sheet introduces the Resilience Roadmap and reviews key concepts including the challenges of resilience, understanding and measuring risk, and how to quantify and articulate the financial business case for resilience improvements.

2. Managing Insurance Cost and Business Risk
   This fact sheet discusses the role that the insurance industry plays in mitigating resilience risk and offers best practices for building owners to work effectively with insurers.

3. Financing and Implementing Resilience Projects
   This fact sheet discusses implementing resilience improvements across a commercial building portfolio and evaluating financing options that can help overcome upfront costs and other common barriers to resilience.

Available at: https://betterbuildingssolutioncenter.energy.gov/finance-resilience
Climate Risk & Real Estate

Katharine Burgess, VP, Urban Resilience, Urban Land Institute

DOE Better Buildings Webinar, April 2020
Urban Land Institute

- Global membership organization of 46,000+ in the real estate and built environment industries
- Organization includes 50+ local District Councils in ULI Americas
- Mission is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide
- Sustainability portfolio addresses energy, health and resilience, with a focus on the business case. Work includes research, technical assistance for cities, outreach and partnerships.
ULI’s resilience work focuses on how cities, buildings and communities can be more prepared for the impacts of climate change, including both environmental shocks and stresses:

- Destructive storms
- Flooding – coastal & in-land
- Extreme heat & cold
- Drought & lack of water
- Related economic and social issues

A key focus: Better understanding, measuring and addressing climate risk and scaling resilience planning accordingly.
What might resilience look like at the city or district scale?

- Resilient land use
  - Development concentrated or encouraged in parts of a city which are by location or circumstance the least vulnerable
  - Land use patterns responding to existing natural systems
  - Potential Tools: Zoning, Comprehensive Planning, Incentives, Buy-outs

- Resilient infrastructure
  - Combinations of grey and green infrastructure designed to both mitigate peak events and provide other benefits
  - Potential Tools: Bonds, dedicated resilience funds, PPPs, expenditures via Capital Improvement Plans

- Well-connected transportation facilities and infrastructure, including transit options and clear evacuation strategies

- Regional cooperation

- Economic resilience – diversified economy

- Equity – Low-income communities are hardest hit by disasters

- Social resilience – strong social networks, particularly for communication before, during and after peak events
What might resilience look like at the building scale?

- Adherence to a stringent building code or beyond; Miami-Dade as gold standard; FORTIFIED offers another example of preparedness for storms/wind
- Elevation and access above 500-year floodplain
- Connectivity to resilient infrastructure
- Elevated mechanicals
- Incorporation of green infrastructure/landscape barriers
- Site planning incorporating existing natural systems, e.g. mangroves
- Ability to “island” - i.e. on-site co-generation, on-site water recycling/purification systems etc.
- Back-up systems such as chillers, HVAC
- Super-insulated windows, operable windows
- Well-developed emergency, business continuity and evacuation plans

Examples at https://developingresilience.uli.org
Opportunities to generate value

- Avoided losses/decreased vulnerability
- Incentives/opportunities for increased density, FAR
- Increased market value
- Fast lease-up
- Increased likelihood of/speed for permitting
- Decreased insurance premiums
- Enhanced user experience
- Enhanced aesthetics and placemaking
- Energy and water usage reductions and savings
- Marketing/brand value
- Extended building life
- Better chance of business continuity

Learn more: developingresilience.uli.org
Increasing damages from extreme weather - $300 billion damage from 2017 hurricane season (NOAA)

Vulnerability of global gateway market cities, especially coastal cities

International standards, frameworks and precedents set by business leaders, key influencers and institutional investors, including TCFD, GRESB

Concern about potential policy changes

Concern about insurance availability or cost
“A plus-4-degree world is not insurable.”
Research findings: Lack of consensus on how to price risk

- **Uncertainties** around timeframe, magnitude, and location of short and long term impacts makes planning difficult.
- Financial **shocks** (from debt and equity cost and availability to insurance and utilities pricing) may come before biggest physical risks materialize.
- Short and medium-term **investment horizons** and owner/tenant **split incentives** may complicate long-term resilience planning.
- **Duty to disclose**? Are companies more exposed knowing climate risks (and not sharing) or not knowing risks?
- **Risk and resilience** – how to consider these issues jointly?

427/Geophy REIT analysis
Starting with a risk assessment

- What geographic locations present the highest risk?
  - Flooding, Heat, Wildfire risk

- Risk as physical and transitional
  - Financial impact of extreme weather event
  - Ability to sell asset at end of hold cycle

- What else to consider?
  - Ability and cost of asset to reduce risk through resilient design/retrofit
  - Likelihood public sector will invest in resilience to reduce event risk
  - Likelihood that insurance will change during hold cycle
Other emerging market responses

- **Mapping physical risk** for current portfolios and potential acquisitions;
- Incorporating climate risk into **due diligence** and other investment decision-making processes;
- Incorporating additional **physical adaptation and mitigation measures** for assets at risk;
- Exploring a variety of strategies to mitigate risk, including **portfolio diversification** and investing directly in the mitigation measures for specific assets; and
- **Engaging with policy makers** on local resilience strategies and infrastructure investments
Further research: Climate Market KPIs

- How to layer and analyze information about:
  - Physical Risk
    - Flooding, Heat, Wildfire, etc.
  - Transition/Regulatory Risk
  - Resilience Planning
    - Scope and sophistication of planning – as relevant to level of physical risk faced
    - Types of policies incorporating resilience – land use, zoning, building codes, etc.
    - Governance approach
    - Extent of/progress with implementation
Further research: Climate Market KPIs

- How to layer and analyze information about:
  - Resilience Planning & Infrastructure Costs & funding models:
    - Bonds
    - Real Estate Taxes
    - Utility Fees
    - Federal/State funding sources
    - P3 and partnership models – Special Districts, Resilience Funds, etc.
    - Etc..

- How viable are these funding models over the long term? And how will these costs be passed on?
Thank you & more information

- Visit the Urban Resilience Program website: https://americas.uli.org/resilience

- All reports are available for download in the reports section

- Project profiles can be accessed at https://developingurbanresilience.uli.org

- Email: Katharine.burgess@uli.org or resilience@uli.org
THE BUSINESS CASE FOR MANAGING CLIMATE RISK

JOSH SAWISLAK, AICP
PRINCIPAL, CLIO STRATEGIES LLC
21 APRIL 2020
WHAT INVESTORS WANT TO KNOW
TYPES OF CLIMATE RISKS

Why

- G20 asked FSB to review how financial sector can take account of climate-related issues

Who

- Task Force chaired by Michael Bloomberg

What

- Provide clear recommendations for preparers to disclose consistent information on climate-related financial risks

Physical Risks

- Financial impacts of physical effects of climate change

Liability Risks

- Financial impacts of legislation to limit carbon emissions, and potential for liability from contributing or failing to act on climate change

Transitional Risks

- Financial impacts of failing successfully transition to low carbon economy

Additional Information: www.fsb-tcfd.org
BUSINESS LEADERS THINK CLIMATE IS A MAJOR RISK
CLIMATE RISK WILL AFFECT YOUR BUSINESS

“Companies that don’t adapt [to climate risk] - including companies in the financial system - will go bankrupt without question.”

Mark Carney
UN Special Envoy for Climate Action and Finance
Companies that don’t adapt [to climate risk] - including companies in the financial system - will go bankrupt without question. (But) there will be great fortunes made along this path aligned with what society wants

Mark Carney
UN Special Envoy for Climate Action and Finance
A Fundamental Reshaping of Finance

Dear CEO,

As an asset manager, BlackRock invests on behalf of others, and I am writing to you as an advisor and fiduciary to these clients. The money we manage is not our own. It belongs to people in dozens of countries trying to finance long-term goals like retirement. And we have a deep responsibility to these institutions and individuals – who are shareholders in your company and thousands of others – to promote long-term value.

Climate change has become a defining factor in companies’ long-term prospects. Last September, when millions of people took to the streets to demand action on climate change, many of them emphasized the significant and lasting impact that it will have on economic growth and prosperity – a risk that markets to date have been slower to reflect. But awareness is rapidly changing, and I believe we are on the edge of a fundamental reshaping of finance.

Larry Fink
Chairman and Chief Executive Officer

Read more
HOW DO WE MEASURE RISK?

• MUST FIRST UNDERSTAND THREAT AND VULNERABILITY (RISK)
• ESTABLISH TIMEFRAME
• CONSIDER THREATS, VULNERABILITIES, AND EXISTING AND PLANNED MITIGATION
• DATA ARE AVAILABLE, BUT TOOLS ARE NOT ALWAYS EFFECTIVE
Moody’s Buys Climate Data Firm, Signaling New Scrutiny of Climate Risks
ARE THE RISKS MATERIAL

Miami (today and 2m of SLR)
THE SOLUTION TO CHALLENGE IS INNOVATION

“We need to continue investing in innovation, looking for solutions and making the solutions more accessible. Humankind has been able to overcome very difficult challenges.”

Patricia Espinosa
Executive Secretary
UN Framework Convention on Climate Change
THE BUSINESS CASE FOR MANAGING CLIMATE RISK

JOSH SAWISLAK, AICP
PRINCIPAL, CLIO STRATEGIES LLC
21 APRIL 2020
Scot Gnewuch
Hartford Steam Boiler Inspection and Insurance Company (HSB)
How the insurance industry is evolving to account for increased climate and resilience risk

RISK ASSESSMENT & MEASUREMENT

- Advancing our understanding of impacts on frequency and intensity of natural hazards
- Building models to assess future potential impacts

DEVELOPING INNOVATIVE INSURANCE SOLUTIONS

- Providing insurance based solutions for new technologies and industries particularly affected by adverse effects of climate change
## Understand the Risks

- What type of Hazards can impact the property
- What are the properties vulnerabilities (how resilient is the building)
- What are the potential financial loss that could be incurred

## Establish a Risk Appetite (i.e. a level of acceptable risk)

- What is the cost to mitigate loss
- Given the cost, what is the acceptable amount of loss

## Develop a Risk Solution

- What is the optimal insurance structure
The only commercial solution in the market to address electrical outage risks
Model considers natural cat, equipment failures, and man made errors
Conditional and probabilistic models look at both occurrence of the outages and duration of system recoveries
Capable of addressing location specific risk and portfolio exposure

Predicts The likelihood that a location will have an equipment breakdown loss, which is strongly correlated to property/liability risk.
Provides insight around equipment risk and aides in establishing risk appetite
Can be used to benchmark an individual location relative to other locations and portfolios
Thank you
BETTER BUILDINGS

Better Buildings is an initiative of the U.S. Department of Energy (DOE) designed to improve the lives of the American people by driving leadership in energy innovation. Through Better Buildings, DOE partners with leaders in the public and private sectors to make the nation’s homes, commercial buildings and industrial plants more energy efficient by accelerating investment and sharing of successful best practices.

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FINANCE + RESILIENCE INITIATIVE

A TWO-PART WEBINAR MINI-SERIES

PART 2

TAKING ACTION TO IMPROVE RESILIENCE & DISCLOSE PERFORMANCE

Tuesday, Apr 28, 2020

3:00 - 4:00 PM ET

REGISTER TODAY
Additional Resources

Finance and Resilience Roadmap:
https://betterbuildingssolutioncenter.energy.gov/finance-resilience

Better Buildings Financing Navigator:
https://betterbuildingssolutioncenter.energy.gov/financing-navigator
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U.S. DEPARTMENT OF ENERGY

JUNE 8–11
2020 SUMMIT
A Virtual Leadership Symposium

Learn more and register: betterbuildingssolutioncenter.energy.gov/summit
Additional Questions?

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