Developing Pre-Disaster Resilience Based on Public and Private Incentivization

An excellent overview and thought-driver for Resilience Incentives

www.nibs.org/?page=mmc

US ranks #1 (worse) in economic disaster losses
Resilience = Functional Continuity

• Can’t have Functional Continuity when Built Environment fails
• Rebuilding is very costly & time-consuming for society
• Sustainability depends on Resilient Built Environment – can’t be ‘Green’ without it
Why Resilience to Natural Hazards is Important for Business

• Business assets suffer most (2nd to residential)

• A large percent of businesses fail or close post-disaster

• Resilient businesses have less earnings volatility and higher value
Businesses lose more than just the buildings

Business Loss = Building + Contents + Revenue + Admin Cost + Reputation

= 2-4 x Building Loss

Buildings are front-line of defense for everything else

Majority of disaster losses involve smaller business facilities
Codes ≠ Resilience

“Building codes are not made to save buildings, but to give people time to escape”

Rationale:

“We cannot afford more resilience”

Limited supply of Code+ buildings
Understanding Business Requires Segmentation

- **By Size:** Larger vs. Smaller
- **By Sector:** Those Affected vs Affecting Built Environment
  - a. **Users:** Critical Resources, Manufacturing, Distribution, Retail, Services
  - b. **Builders:** Developers, Construction, Finance
Public ‘in-the-dark’ regarding the Resilience of properties

• How Resilient is the home you buy or rent?
• How Resilient is the business facility you own, lease or work in?
• Consumers can find more publicly available information on ‘resilience’ of cars than about buildings
Impediment: Can’t easily label A=Resilient vs B=Not-Resilient

• No national metrics
• Possibility: Fortified vs Not-Fortified (IBHS)
• Disasters provide wealth a data, but FEMA (and States) have no disaster databases on buildings
• Difficult to research and learn from history of what was destroyed vs what survived
• Insurance companies do not share data
‘Not-Resilient’

• Built Environment investments vulnerable to hazards because:
  - Rules allow (current or grandfathered)
  - **They are profitable**
  - Short-term horizon
  - Developer/builder doesn’t pay losses

• Rationale used to oppose Resilience:
  - **Affordability**
  - Economic Development
  - Local Control
  - Hazard Denial/Down-play
Developer Paradox:
More Profitable to Build Non-Resilient
Risk economic analysis is lagging

• Traditional single-hazard risk analysis is flawed
• Most sites have 2-4 concurrent hazards: Fire, plus one or more of Wind, Water and Seismic
• Example: combined 10 yr risk of three 1:200 hazards is 14%
• Resilience measures can reduce combined risk to 1:750, or 4%
• If potential loss is 2-4 x building, business should be willing to invest 15-30% (discounted) in Resilience
Isn’t that what Insurance is for?

- Property insurance market cycles distort risk economics
- A ‘price-as-you-go’ system – no long-term insurance market
- Transfer ≠ Reduction: Ultimately the public (consumers/taxpayers) bear losses
- Greater Resilience is the only strategy
Business Resilience Attitudes Diverge

• **More Resilient**
  a. Larger Businesses
  b. Developer-Owner-Occupants
  c. Critical Resources, Manufacturing
  d. Resilient Materials Producers

• **Less Resilient**
  a. Smaller Businesses
  b. Renters, Purchasers
  c. Homebuilders, Investors & Small Developers
  d. Non-Resilient Materials Producers
Why?

• **Larger Business**
  - Internal resources, expertise and advisors to manage risk
  - Insurers (like FM Global) collaborate on risk reduction; high degree of self-insurance
  - Tend to **build and own** facilities
  - More diversified

• **Smaller Business**
  - Lack resources, expertise and advisors
  - Rely on building codes
  - Tend to **lease or buy from building stock**
Smaller businesses often form parts of supply/distribution chains

Company only as Resilient as its weakest link

Strategy: Build 360° ‘Chains-of-Resilience’
What incentives work best

- **Larger Businesses**
  - *Tax Incentives*
  - Green Incentives (piggy-back)
  - Permit Incentives
  - Publicity Incentives

- **Smaller Businesses**
  - *Tax Incentives*
  - Finance Incentives
  - Insurance Incentives

*Make Resilience a condition to existing incentives*
Resilience Incentives vs. Not-Resilient Disincentives

• Reducing profitability of Not-Resilient development is as important as creating incentives

• Reduce Federal assistance for communities that fail to raise resilience standards and incentives

• Greater value and cost differentiation between Resilient and Not-Resilient properties:
  - Appraisals
  - Finance availability and rates
  - Taxes
  - Insurance
  - Incentives (development, permit, green etc.)

• Cost of Resilience incentives should be borne by those choosing to be and stay Not-Resilient
Hold Not-Resilient development accountable for Social Cost

Social Cost = Response + Recovery + Lost Taxes + Admin Cost + Reputation = 4-8 x Building Loss

Social cost of fires is $300 billion/yr

(NFPA Study, 2011)
The Challenge: Implementation

- Fragmented system
- Reactive culture
- Opposition/inertia to change
- Insufficient/cycling national leadership
- Dependence on local champions

*Private-Public collaboration targeting select vulnerable urban areas*
Immediate Priority: Raise Public Awareness

• Easy-to-understand Resilience metrics
• More public transparency of Resilient vs. Not-Resilient properties
• More disclosure (public company financials)
• Media and education spotlight that Resilience contributes to environmental and climate solutions
Thank you!

For more information: buildingresilient.com