Sustainable Risk Management and Disaster Response

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US Green Building Council – Missouri Gateway Chapter

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Six Very Bad Weeks
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Disasters large and small are the new normal

“Ordinary” everyday disasters under the national radar
Six Very Bad Weeks

Are you prepared?

Small businesses can be vulnerable during any kind of disaster, but especially during severe weather events. Here are steps small businesses can take to be prepared.

- Life safety comes first!
  - Develop an evacuation plan and procedure.
  - Prepare emergency medical procedures and emergency medical equipment.
  - Prepare and store essential supplies, including the patient's medications.
  - Review and maintain other essential medical equipment.

- Off-season
  - Develop an emergency plan with your company's management and personnel.
  - Review and update your emergency plan to ensure your company is prepared.

GET PREPARED
Protect Your Business the Easy Way

10/10/2017
Disaster Response
Agenda

Disaster – Risk and Vulnerabilities

Costs of a Disaster

Sustainable Disaster Response Framework for Communities and Organizations

Questions
Missouri Has It All
Missouri Has It All

Missouri has been spared the worst of the recent major disasters - but

Since 1990, Missouri has received more than 35 federal major disaster declarations
Missouri Has It All

The Mississippi River eclipsed the 40-foot flood stage at St. Louis in 2013, 2016 and again in 2017.
Missouri Has It All

New Madrid

[Map of the New Madrid Fault]

[Map highlighting an earthquake near Fenton in the St. Louis area]

10/10/2017 Disaster Response
Missouri Has It All

Tornados
Missouri Has It All

Hail
$ Trillions Spent

$1.2 Trillion  cost of 203 extreme weather events in the U.S. since 1980

13  Billion dollar weather events in 2016

$180 Billion  Losses in last 10 years from tornados and thunderstorms

6  1000 year US flood events in 2016

$17 Billion  US flood losses in 2016

$52 Billion  NFIP claims paid since 1978

$1.5 Trillion  Projected reconstruction costs of US property exposed to storm surge

$500 Billion  Projected reconstruction costs of homes in high hazard wildfire zones

$10 Billion  Annual homeowners losses from non flood water damage
$ Trillions Spent

$10.3 Billion  Damage from structural fires in 2015

$357 Billion  Federal spending on disaster recovery over the past decade

2017 will add to these numbers

Financial burden is borne by everyone

Incalculable human cost - death, injury, disease, displacement, suffering

Climate change exacerbates the situation
Are Communities Prepared?

How some communities have prepared

Develop wetlands
Are Communities Prepared?

How some communities have prepared

Pavement and lots of it
Are Communities Prepared?

How some communities have prepared

Build in flood plains, urban wildland interface, fault zones and on poor soil
Are Communities Prepared?

How some communities have prepared

Deny climate change in policy and actions
Are Communities Prepared?

How some communities have prepared

Loose zoning, weak building codes
Are Communities Prepared?

How some communities have prepared

Above ground power lines
Are Communities Prepared?

How some communities have prepared

Poor, old or nonexistent disaster response plans
Disaster Response

How we respond after the disaster

Rebuild in the same place with the same materials as before the disaster

NFIP encourages rebuilding in flood-prone areas

FEMA “severe repetitive loss properties” - those with more than four claim payments over $5,000 each

Missouri has 1526

Private insurance “like kind and quality” and may restrict ability to rebuild at a different location

Tear out everything and send it to a landfill

Cost and Environmental footprint of rebuilding with new building materials

Rebuild with inferior materials (“Chinese” drywall) and unqualified contractors - demand surge
Disaster Response

How we respond after the disaster

Fight back – “The tornado destroyed Hometownville but we won’t let mother nature get the best of us! We are going to rebuild”

Live the American dream - I’ve always wanted a house … by the ocean…in the woods…in the mountains…on the river

My house only gets destroyed every ten years or so – “Sure we suffered from Andrew and Wilma was worse, but we rebuilt in the Keys. We’ll do the same thing after Irma”

“Our family has lived beside this river for five generations. We aren’t giving up now just because of a couple of floods”

“The risk is overwhelming”
Head In The Sand Approach

WHAT ARE YOU DOING?

LIFE HAS OVERWHELMED ME, SO I HAVE SHOVED MY HEAD INTO THE SAND.

WHY WOULD YOU DO THAT?

BECAUSE IGNORING REALITY IS THE NEXT BEST THING TO CHANGING IT.

THIS IS THE HAPPIEST DAY OF MY LIFE.
Disaster Response

How we respond

Have we learned from disasters?
Is the huge $$ spend an investment in the future?
Are our buildings and communities safer, greener?
Are they more resilient?

We are wasting an huge opportunity
And worse
Insanity

Insanity: doing the same thing over and over again and expecting different results.

-Albert Einstein
Sustainability

There has to be a better way – Sustainable Disaster Response

Broad definition of sustainability:

- Provide what is needed to survive/thrive, today and in the future
- Hold up to the weight of events and time
- Successfully deal with expected problems and risks

Sustainability is environmentally sound (green), economically sensible, safe and secure, resilient
Sustainability

Sustainable Disaster Response

Sustainable disaster response means that we plan, design, build and maintain buildings and communities in ways that foster sustainability in the face of disasters, large and small.

It is really Risk Management.
Risk Management

Several levels of risk management

Classic risk management

deals with risk

Enterprise risk management

adds opportunity to risk

Sustainable Risk management

adds sustainability to enterprise risk management

Sustainable Risk Management framework supports effective disaster preparation
Risk Management

But wait, aren’t sustainability, disaster preparation, resilience and risk management very different concepts?

They are interwoven in a simple process focused on recognizing and achieving a community’s or organization’s risk management, sustainability and disaster response objectives:

Manage risk, maximize opportunity and protect against the unexpected

Green Building and sustainable practices reduce risk and maximize opportunities

**Sustainability, disaster preparation and resilience and risk management are all connected and can all be addressed by following the sustainable risk management process**
Sustainable Risk Management Process

1) Identify (risks, vulnerabilities, opportunities, objectives)

2) Analyze (frequency, severity, probabilities of risks and vulnerabilities) criticality, difficulty (of opportunities) and strategic priorities

3) Review alternative techniques to address risk, opportunities and strategic objectives
Sustainable Risk Management Process

Techniques

a) Avoid, forgo
b) Mitigate (lessen impact, resilience)
c) Adapt (change processes, resilience)
d) Separate, segregate, duplicate (protect, resilience)
e) Transfer (insurance, contracts)
f) Fund

4) Implement

5) Monitor, correct, reassess
Risk Management and Disaster Preparation in Action

1) Identify your vulnerabilities and risks (and sustainable opportunities)

2) Analyze potential severity of risk, frequency of occurrence, probability, human and financial exposures, ability of community, building, business, you and family to deal with risk. Create a simple matrix

Mississippi flood and New Madrid event

3) Prioritize, biggest impact first
Risk Management and Disaster Preparation In Action

3) Select technique to manage (or develop a disaster preparation plan)

   Mitigation (reduce impact through physical changes i.e., flood barriers)

   Adaptation (make changes to live with risk, i.e. building codes, zoning, proactively depopulating most vulnerable areas)

   Plan how to respond once event occurs (to protect people and property)

4) Transfer

   What does insurance cover? What does it exclude? Terms and conditions, deductibles
Community Vulnerabilities

Existing built environment a problem

- Expensive to build resilience into an existing community
- More expensive not to, but there is some money available after the disaster
- Most communities have disaster plans, some are quite good, others …
Community Vulnerabilities

Existing built environment a problem,

Most communities have some idea of their vulnerabilities but are surprised and not prepared when the worst happens (even if they have a plan) - “Who could have known it would be this bad …”

- Anti-regulation bias can work against effective zoning and codes
- Pollution and environmental disasters

So we continue to do things the same way as before and expect different results
Funding

How do you fund resilience?

Green Bonds

New Construction

Existing buildings - repair and maintenance budget

Foundations and grants
Building And Organization Vulnerabilities

Buildings are vulnerable

Fire, wind, vandalism, earthquake, hail, flood, obsolescence, deferred maintenance, pests, broken pipes, bad tenants ….

Code is “barely legal” construction

Resilience difficult to define, no consensus standard
Building And Organization Vulnerabilities

Buildings are vulnerable

Retrofitting is expensive

Does LEED = resilience?

Is a building resilient if the community is not?
Building And Organization Vulnerabilities

Organizations are vulnerable

Most organizations have not assessed vulnerabilities or created disaster response plans

When they do, the plan sits in a bookcase or on a hard drive, not part of organization's DNA

Organization's that have good plan may not have coordinated with the community

Risk management plans often don’t go beyond buying insurance
Building And Organization Vulnerabilities

Organizations are vulnerable

Chemical company exec says after generators run out of fuel they have no way to keep chemicals from exploding, “Who could have anticipated this much rain?”

HOUSTON  9-7-2017 (Reuters) - Police and emergency workers filed suit on Thursday against chemical company claiming they were injured after it failed to take adequate steps to avoid a fire at its Texas, plant after Hurricane Harvey.
Phases Of Disaster Response

Two phases of disaster response – prepare and respond

Preparation and planning
Long term, not just right before the event
Phases Of Disaster Response

Without a plan, you have no effective response
Planning Disaster Response

Develop a disaster response plan that aligns with your sustainability vision

- Develop a risk management response plan that can address losses to physical property, infrastructure, employees, ingress/egress, etc.
- Strategize on how to reduce/transfer risk in correlation to your risk management plan and how that impacts your sustainability vision
- Define in the plan sustainability/resilience post-loss goals (contractor selection, debris removal)
- Review your potential post-loss operations and how your organization can survive a disaster/loss (remember - most businesses do not come back after a major disaster/loss)
- Seek the help of an insurance professional who understands risk, sustainability and resilience
Planning Disaster Response

Develop a disaster response plan that supports your sustainability and risk management goals

- Adequate insurance/risk management program
  - Business income, off premises power, flood, earthquake, green rebuild
- Supply chain risk
  - Suppliers, customers
- Post loss contractors
  - Define goals, select in advance
- Data and critical information back up
- Rehearse and connect to community
- Revisit and revise
Disaster
Disaster
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Disaster
Organization Disaster Response

Initiate plan to protect people and property

Revise plan implementation to fit circumstances

No plan survives contact with the enemy  *Helmuth von Moltke*

Follow civil authority and first responder direction

Contact insurers quickly

Document losses

Deal only with reputable contractors who value and practice sustainability
Resilient And Sustainable Response

First responders and disaster relief agencies are amazing

Save lives, provide refuge, protect property

Both have had plenty of practice

Single disasters (Harvey) can overwhelm responder and agency capacity

Multiple disasters stress resources

We have short attention spans and memories
Resilient And Sustainable Response

Second responders stabilize property and begin rebuilding

Many very professional but not all, some unqualified

Demand surge

Need for consensus standards on how they do their job in a sustainable way

Standards will benefit property owners, tenants, businesses, insurers, workers, community, environment
Resilient And Sustainable Response

Need for consensus standard

- How much to tear out?
- Focus on recycling or reuse
- Dealing with dangerous debris and building products
- Mold
- Green and sustainable practices?
- Employee and public safety
- Emphasis on getting it done quick and cheap
Building Professional (AEC) Disaster Response

Rebuilding after the event you have some control

- Plan sustainable and resilient structure
- Analyze vulnerabilities and opportunities
- Design should anticipate vulnerabilities and capitalize on opportunities (green)
- Resilience (mitigation and adaptation) built in
- Go beyond code
- Avoid vulnerable sites
Community Disaster Response

Did it make sense to rebuild in the lower 9th ward after Katrina or on the Jersey shore after Sandy?

Communities have the opportunity and money to rebuild smart, sustainably and resiliently –INVEST IN SUSTAINABILITY
Community Disaster Response

Will we be visionary

or rebuild doing exactly what we have always done?

Insanity: doing the same thing over and over again and expecting different results.

- Albert Einstein
Community Disaster Response

Disasters can be the catalyst for better buildings

South Florida Building Code

Irma aftermath – post Andrew building codes effective but what about the pre-Andrew built environment?

California building codes get stronger after every earthquake

ICC announced the creation of the Alliance for National and Community Resilience in 2016
Call to Action

The solution is in your hands

Develop effective pre-disaster plans for your organization and family

Advocate for strong codes, land use policies and responsible development

Walk the talk in your businesses and practices

The wise investment of recovery dollars will save lives, help to keep insurance available and affordable and taxes manageable
SDRC was founded in 2016 as a registered nonprofit organization governed by a Board of Directors. Membership is open to all interested parties committed to advancing our mission.

SDRC members collaborate in industry/stakeholder and subject matter-specific working groups to implement our programs.

SDRC’s mission is to promote sustainability in disaster response and property restoration - helping American homes, businesses and communities turn every loss into smart investments in a stronger, safer, healthier and environmentally responsible future.
Sustainable Disaster Response Council

**SDRC**
Research – Advocacy – Standards – Certification – Education

SDRC will
- Develop a blueprint for how organizations, buildings and communities, responders and building and design professionals can implement sustainable disaster response best practices
- Advocate pre-disaster for sustainable and resilience insurance coverages and government response
- Develop pre-disaster tool kit for communities, organizations and individuals to help them identify risks and vulnerabilities and implement and fund effective, sustainable and resilient risk mitigation and adaptation best practices
Thank You And Questions

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