

February 6, 2014

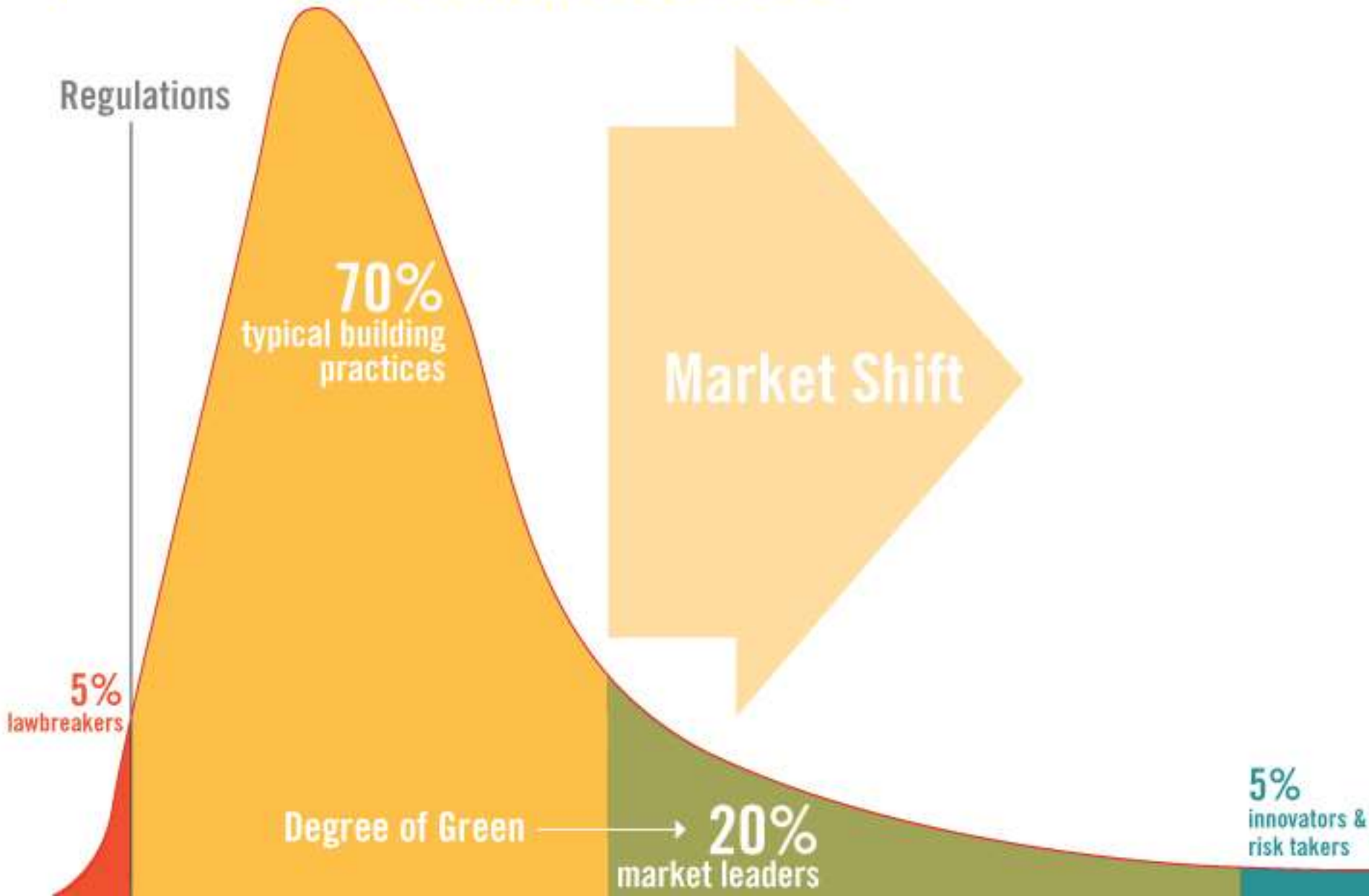
NASEO Energy Policy Outlook
**High Performance Buildings – How
Integrated Thinking is Helping Drive
More Resilient Buildings**

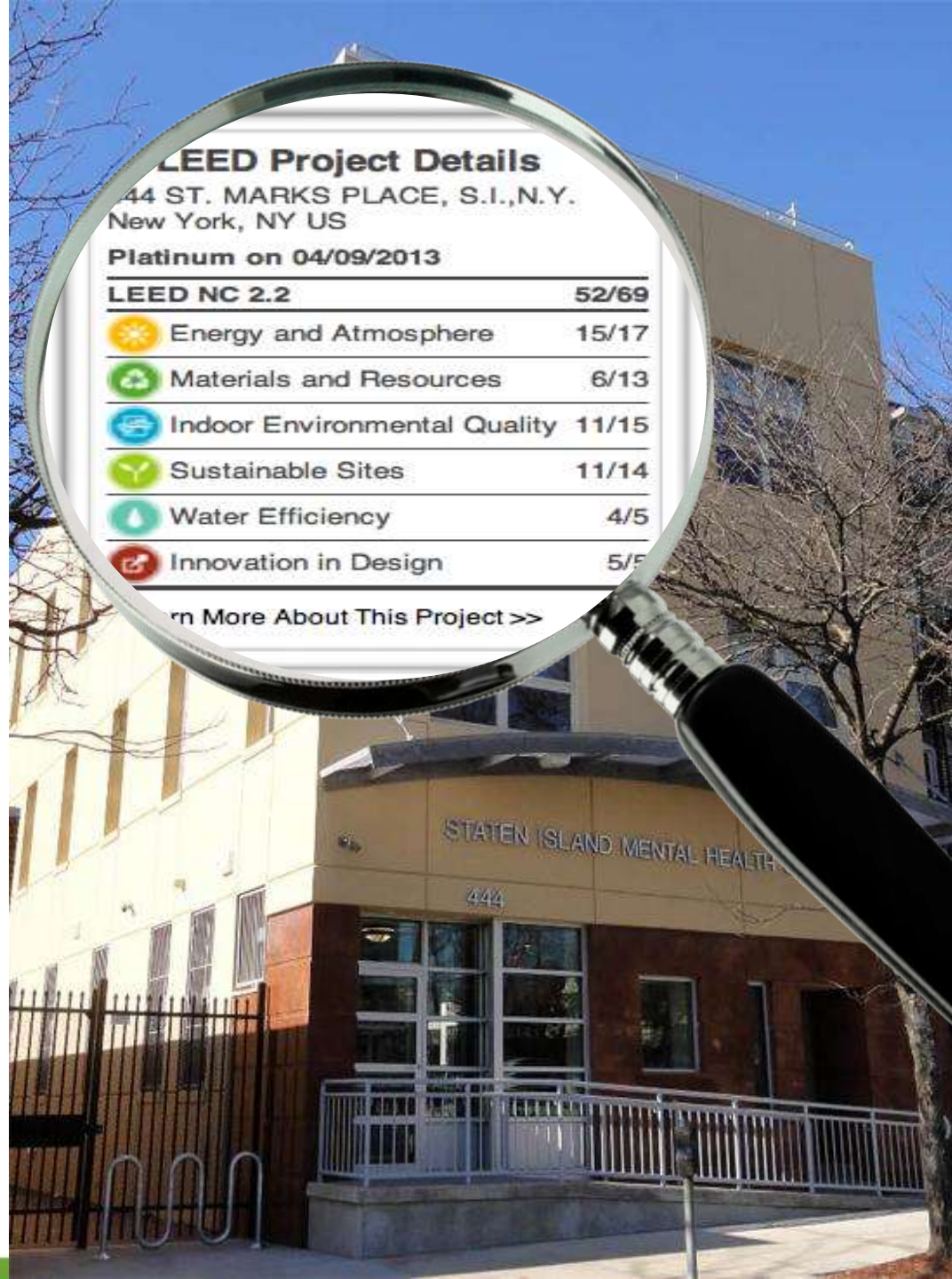


JASON HARTKE

Policy & Advocacy
U.S. Green Building Council

Market Transformation





LEED Project Details

444 ST. MARKS PLACE, S.I., N.Y.
New York, NY US

Platinum on 04/09/2013

LEED NC 2.2		52/69
 Energy and Atmosphere		15/17
 Materials and Resources		6/13
 Indoor Environmental Quality		11/15
 Sustainable Sites		11/14
 Water Efficiency		4/5
 Innovation in Design		5/5

[Learn More About This Project >>](#)

ACTIVITIES ▸

 **160,812**

HIGHLIGHT

Silverstone

Pune MH IN

MORE ACTIVITIES (9 of 160,812)

**Toyota Motor
Manufacturing Texas
(TMMTX)**

San Antonio TX US

**Gayrettepe Mah. Barbaros
Bulvari No 145 Besiktas /
Turkey**

Istanbul Istanbul TR

**Mehrregionenhaus-
Hessische Landesvertret**

BUILDINGS ▸

 **89,533**

HIGHLIGHT

2300 Southern Blvd

Bronx, NY 10460, USA

MORE BUILDINGS (9 OF 89,533)

1000 Richmond Terrace
Staten Island, NY 10310, USA

College of Staten Island

2800 Victory Blvd, Staten
Island, NY 10314, USA

908 Quality Way

Richardson, TX 75081, USA

PLACES ▸

 **5,836**

HIGHLIGHT



World

MORE PLACES (9 OF 5,836)

United States

CA, United States

STRATEGIES ▸

 **950**

HIGHLIGHT

LEED NC 2.1 SSp1

1,512 activities

MORE STRATEGIES (9 OF 950)

LEED NC 2.1 SScl
664 activities

LEED NC 2.1 SScl4.2
659 activities

LEED NC 2.1 SScl4.4
512 activities

LEED NC 2.1 SScl5.1

COLLECTIONS ▸

 **2,888**

HIGHLIGHT



**Optimize energy
performance**

MORE COLLECTIONS (9 OF 2,888)

Regional Materials
8,627 activities



All

EA

MR

IEQ

SS

WE

ID

Energy and Atmosphere

11/12

Total EA Points

Exceptional

Top 2% of all LEED CI 2.0 activities

Benchmark



Top **1%**
of all activities in District of
Columbia

United States

Top **2%**
of all activities in United
States

Credit Achievement

EAc1.1: Optimize
energy performance,



Exceptional
Top 16% of all activities.

EAc1.2: Optimize
energy performance,



Excellent
Top 43% of all activities.

EAc1.3: Optimize
energy performance,



Exceptional
Top 24% of all activities.

EAc1.4: Optimize
energy performance,



Very Good
Top 50% of all activities.

EAc2: Enhanced
commissioning



Excellent
Top 37% of all activities.

EAc3: Energy use,
measurement &



Excellent
Top 50% of all activities.

EAc4: Green power



Excellent
Top 49% of all activities.

EAp1: Fundamental
commissioning



Achieved by **100%** of all
activities.

After Sandy, New York aims to fortify itself against next big storm, climate change



CAPTION



By Lenny Bernstein, Published: July 14 [E-mail the writer](#) ↗

NEW YORK — Off a narrow road in a swampy part of Staten Island, Thomas Morello is preparing his two-family home for the next time the water pours in from Lower New York Bay, a quarter-mile or so away.



The Next Leadership Challenge: Advancing the Resiliency Agenda

A Multi-Layered Engagement

“From the White House to the State Houses, City Halls to community leaders, the private sector to the civil society organizations, we need to set new standards for resilience.”

A New Agenda

“The resiliency agenda will require a deep and profound reassessment of our priorities.”

A Preparedness Agenda

“We need to be ready, not surprised”

An Action Agenda

“While the human condition can never be free of risk, if we are to have regrets, let us not regret our inaction”



RESILIENT BUILDINGS AND CITIES

A MORE RESILIENT SOCIETY

The world is more interconnected, more urbanized, more complex and yet more fragile than ever. In the past year, the United States has suffered through 14 separate billion-dollar disasters. In the last two years alone, the country has lost nearly \$200 billion dollars in damages from disasters. In the face of these multidimensional threats, hazards and disasters, we've learned that none of us is immune. We're all vulnerable. Four out of five Americans live in places hit by weather-related disaster since 2006. The number of people affected by climate-related natural disasters is expected to jump by more than 50 percent in just two years. At the same time, the bones of our economy are slipping into disrepair, too often neglected and ignored. In fact, the nation's infrastructure, which supports everything that makes our economy go, is facing an investment gap of \$1.6 trillion. The challenge is clear. We need a forward-thinking framework to address the vagaries of a changing climate and this new era of risk and vulnerability. Resilience is the right paradigm to develop the institutional foresight and broad societal understanding and solutions needed to foster a stronger America. To help realize a more fortified future, we are playing our role to create and support a more resilient built environment.

"Being green is one part of being resilient"
-William Craig Fugate,
Administrator, FEMA

ADVOCACY AND OUTREACH

Resilient Communities for America

Resilient Communities for America is a national campaign that will mobilize thousands of U.S. mayors and other local elected leaders who pledge to create more resilient cities, towns and counties



playing a leadership role in creating a safer, stronger and more sustainable future.

Strengthening the Resiliency of Our Nation on the Ground (STRONG) Act of 2012

Most pieces of legislation start with a series of customary "findings." However, the findings section of the [Strengthening the Resiliency of Our Nation on the Ground \(STRONG\) Act of 2012](#) reads like a biblical warning.

It points out that:

- There have been 130 separate billion-dollar-plus disasters in the U.S. in the past 30 years (14 in 2011 alone).
- Hurricane Sandy led to more than 100 deaths and is projected to have caused more than \$50 billion in damages, affecting more than 8.5 million homes.
- Hurricane Katrina led to more than 1,800 deaths and more than \$80 billion in losses and a subsequent \$120 billion in federal spending.
- 2011 was the worst year on record for damages from natural disasters.
- Extreme weather has hit every region in the U.S. this year.

Interpreting these findings is simple. The strength and resiliency of our country is at risk, and our increasing vulnerability is exposed more and more each year. The goal of the act is to offer new ways to better support state and local governments, as well as the American public, in their short- and long-term preparedness efforts. For example, an

Our Focus:

✓ Synergy

✓ Connectivity

✓ Capacity



Resilient Buildings and Cities

Advocacy & Outreach

- A National Campaign: RC4A
- Leadership Speaker Series
- Policy Platform

Research & Resources

- The New Orleans Principles
- Sustainable Rebuilding Guidelines
- Green Buildings and Climate Resilience
- Climate Resiliency Screen Tool

Partnerships & Initiatives

- Community Resiliency Task Force
- Resiliency Initiative on Global Urban Readiness (RIGUR)
- ICLEI, USCM, NLC, C40, BGA, CGI



Synergy: Hitting the Ground Running

*“Being green is one
part of being resilient”*

-William Craig Fugate,
Administrator, FEMA

University of Michigan

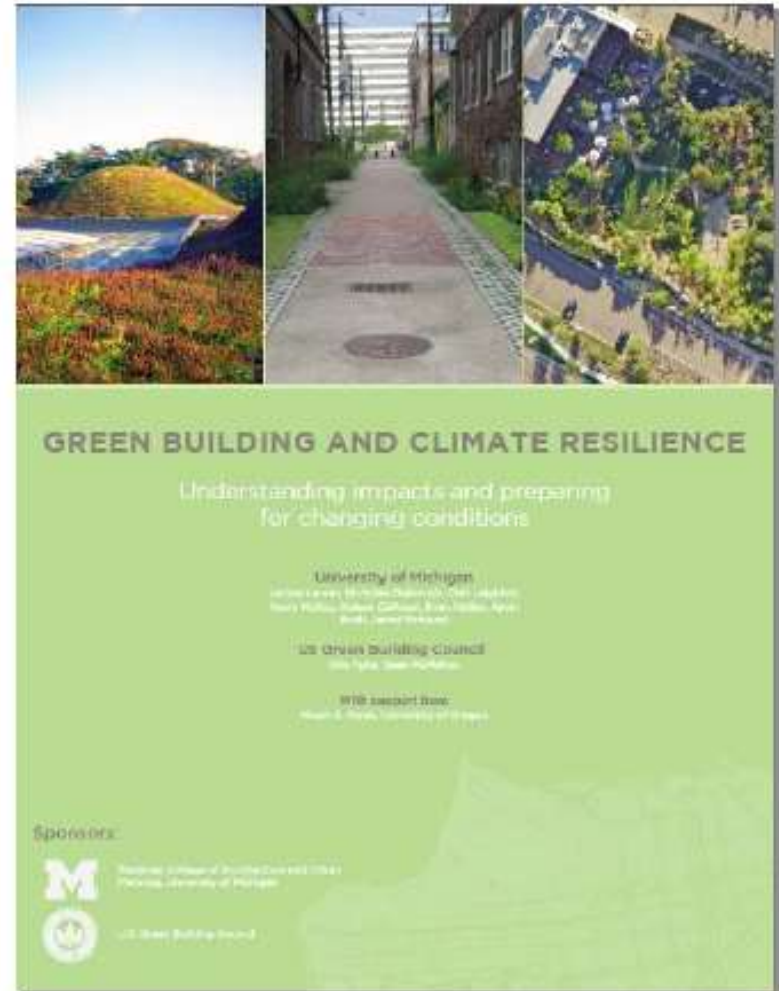
Larissa Larsen, Nick Rajkovich,
Clair Leighton, Kevin McCoy,
Koben Calhoun, Evan Mallen,
Kevin Bush, Jared Enriquez

US Green Building Council

Chris Pyke, Sean McMahon

University of Oregon

Alison G. Kwok



Download from www.usgbc.org/research

Green Building

Emissions
Mitigation

Reducing the drivers of
climatic change

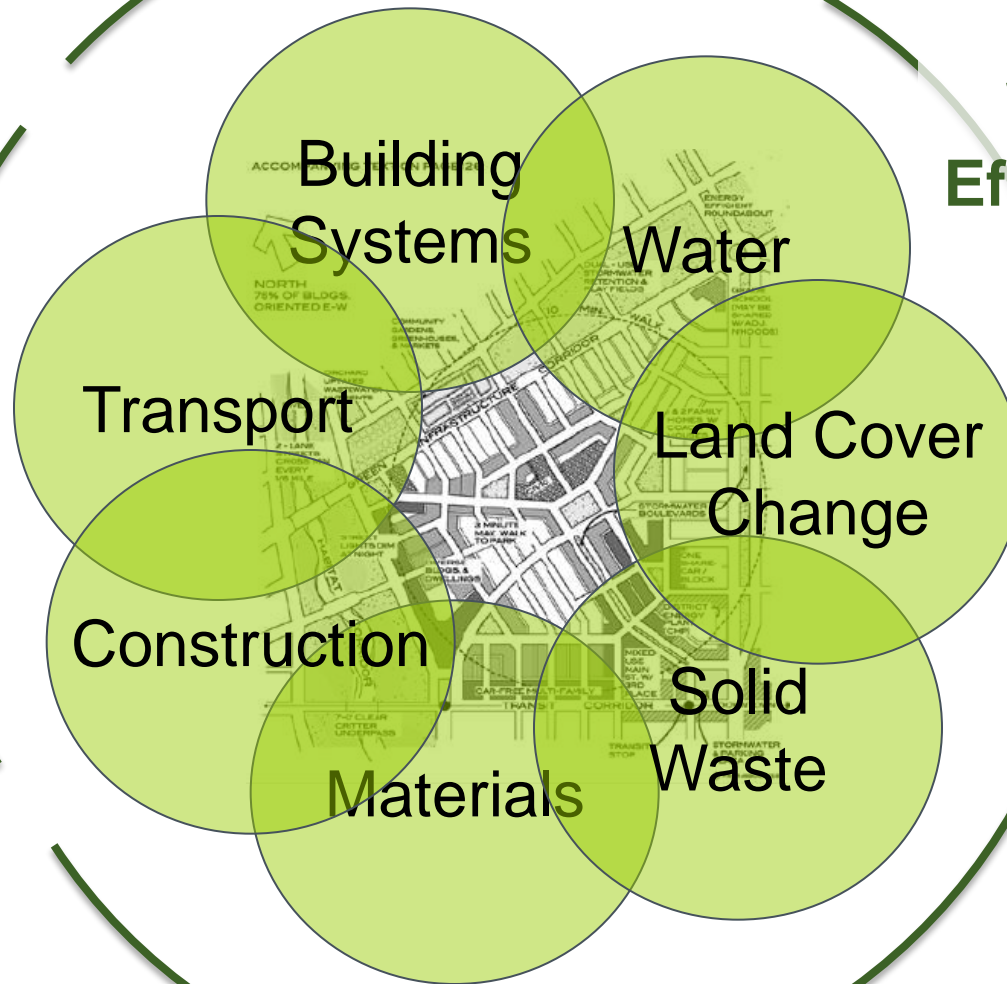


**Energy &
Atmosphere**

**Water
Efficiency**

**Location &
Planning**

**Sustainable
Sites**



**Materials &
Resources**

Green Building

Emissions
Mitigation

Reducing the drivers of
climatic change

Climate
Resilience

Performing under future
conditions



Aligning Climate Resilience Strategies with LEED

- 1) envelope,
- 2) siting and landscape,
- 3) heating, cooling, and lighting,
- 4) water and waste,
- 5) equipment,
- 6) process and operation.

Regional Climate Impacts

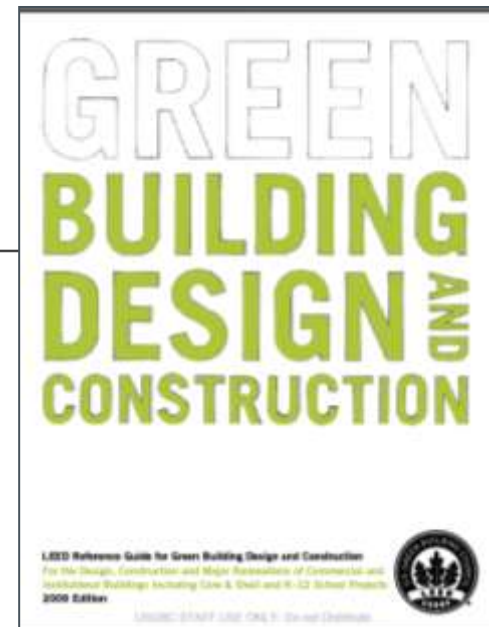


Identified regional climate impacts relevant to the built environment.
Referenced US Global Change Research Program publications.



EA Credit 1: Optimize Energy Performance

1–19 Points



Building Performance



**Buildings are designed
based on historic conditions**
e.g., Typical Meteorological
Year

**Future conditions are
unlikely to match historic
assumptions**

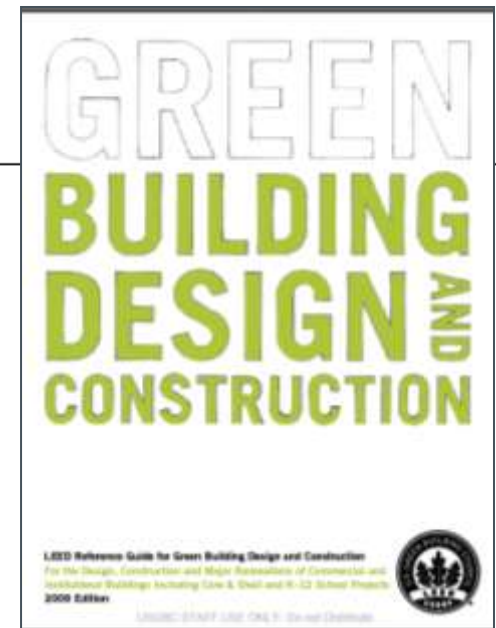
e.g., *minimum* rise of 1.5° C
by 2020; potential for $>5^{\circ}$ C





SS Credit 6.1: Stormwater Design—Quantity Control

1 Point



Stormwater Management

**Stormwater control strategies
are based on historic design
storms**

e.g., storm intensity,
frequency

**Trends indicate an increased
frequency of high-intensity
precipitation events**

e.g., in New England +28% in
20 years, +127% in 90 years



Will we be Resilient to: Warmer Temperatures

- Avoid increasing cooling-load
- Landscaping to minimize cooling requirements
 - Planning for (new) Pest management
- Natural ventilation
- High-efficiency lighting & equipment
- Increase cooling design temperatures

Will we be Resilient to:

Drought and Water Shortages

- Water-efficient fixtures and appliances
- Water-conserving fixtures; Plumb for graywater separation
- Rainwater harvesting
- Native vegetation

Will we be Resilient to: **Stronger Storms and Flooding**

- Planning, designing and engineering for extreme wind
- Avoiding flood zones, which are getting bigger
- Adjusting for greater stormwater capacity
- Raising buildings and equipment

Will we be Resilient to: Energy Disruptions?

- Site-generated, renewable electricity
- Net-zero energy buildings
- Advancing “Passive Survivability”
 - Solar hot water
- Utilizing equipment with emergency operability



'No Regret' & Resilient Strategies

	No Regrets	Resilient
Envelope	7	17
Siting and Landscaping	12	8
Heating, Cooling, & Lighting	11	1
Water and Waste	6	3
Equipment	3	6
Process & Operations	4	3



LEED Climate Resilience Screening Tool

Select Rating System:

LEED EBOM 2009

Select Climate Zone:

Temperate

For Köppen Climate Zone details please click [here](#)

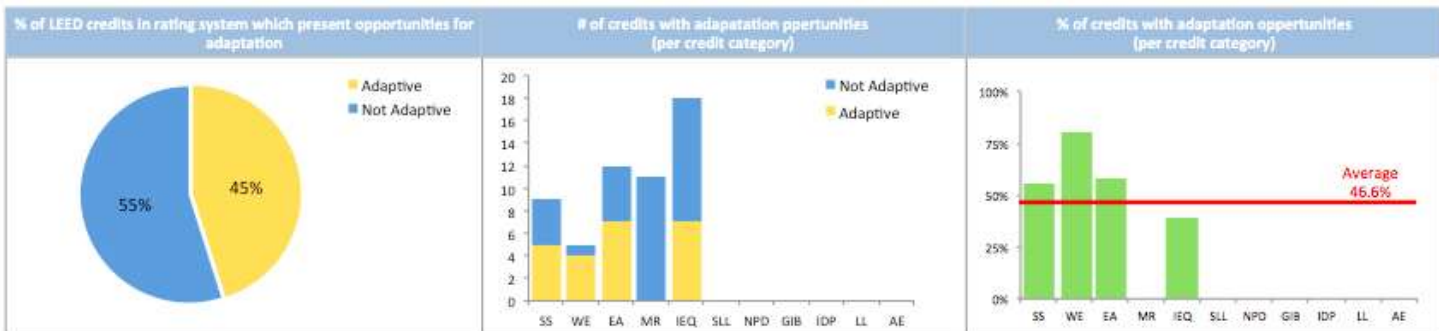
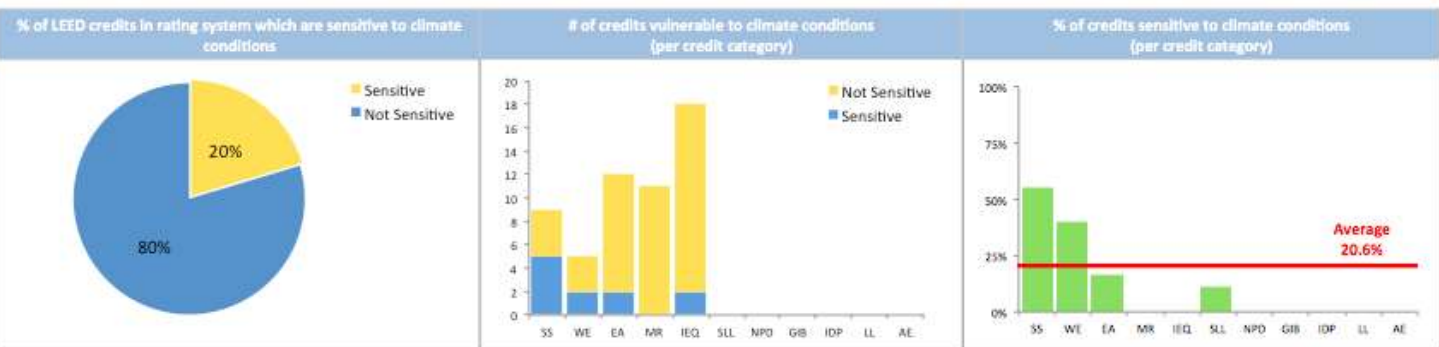
Results - Dashboard

Home

User Guide

Results

Analysis



	Sensitive		Adaptive		Credits		Sensitive		Adaptive		Credits		Sensitivity (%)		Adaptation (%)	
	# Credits	% Credits	# Credits	% Credits			Yes	No	Yes	No						
	11	20%	23	45%	SS		5	4	4	5	SS		55.6%		55.6%	
	43	80%	28	55%	WE		2	1	3	4	WE		40.0%		80.0%	
					EA		2	5	10	7	EA		16.7%		58.3%	
					MR		0	11	11	0	MR		0.0%		0.0%	
					IEQ		2	11	16	7	IEQ		0.0%		38.9%	
					SLL		0	0	0	0	SLL		11.1%		#N/A	

WHAT IS THE BUSINESS CASE?

Green building provides substantial financial benefits, making it a clear triple-bottom line win.





**RESILIENT
COMMUNITIES
FOR AMERICA**



RECEIVE OUR UPDATES

email address: **Submit**

OUR COMMUNITIES AT RISK

HOW WE BUILD RESILIENCE

JOIN THE LEADERS



Extreme Weather Taking a Toll

Heat waves, floods, storms, and droughts are ravaging our communities. Local governments must prepare. [Learn More >>](#)

A MESSAGE FROM MAYOR KEVIN JOHNSON >>



ABOUT THE CAMPAIGN

Resilient Communities for America (RC4A) will champion the leadership of hundreds of local elected officials who commit to creating more prepared communities that can bounce back from extreme weather, energy, and economic challenges. A strong and prosperous America starts with local leadership. [Learn More >>](#)

LATEST AGREEMENT SIGNATORIES

Mayor Kevin Johnson, Sacramento, CA
Mayor Mark Mallory, Cincinnati, OH
Mayor Vincent Gray, Washington, DC
Mayor Michael Hancock, Denver, CO
Mayor Frank Cownie, Des Moines, IA
Mayor Kristin Jacobs, Broward County, FL
Mayor Sylvester James, Kansas City, MO
[VIEW ALL >>](#)

TAKE ACTION

Elected Officials:
[Sign the Agreement >>](#)

Local Government Staff:
[Access Solutions >>](#)

Community Members:
[Engage Your City & County >>](#)



Partners & Leaders



Campaign Chair:
Mayor Kevin Johnson
Sacramento, CA



Advisory Committee: city & county staff, academics, business leaders



Goals & Outcomes



RESILIENT
COMMUNITIES
FOR AMERICA

- 1,000 elected official signatories by 2015
- More local governments taking measureable action on climate and energy issues, empowered through campaign tools, resources, collaboration
- Greater federal and state support of community resilience and local climate action
 - Cities and counties helping to lead a new resilience movement





Why We Need a Leadership Campaign

City & county challenges:

1. Extreme weather & climate change
2. Energy security
3. Faltering infrastructure
4. Economic uncertainty





Paths to Resilience

“ the ability to bounce back from disruptions in a sustainable way and maintain a good quality of life for all ”

Climate

- Preparing for extreme weather and climate trends
- Reducing carbon pollution

Energy

- Expanding local renewable energy
- Increasing energy efficiency

Infrastructure

- Upgrading community facilities
- Creating new financing models
- Harnessing innovations in information technology and green infrastructure

Economy

- Protecting businesses, infrastructure and assets from climate impacts
- Ensuring reliable access to water and energy



Agreement Letter



- Resilient Communities for America Agreement:
- Sign-on letter for elected officials to formalize commitment, showcase leadership

Resilient Communities for America Agreement

We, the mayors and local leaders of America, will lead the creation of more resilient cities, towns, and counties, built to overcome our nation's **EXTREME WEATHER, ENERGY, and ECONOMIC** challenges.

A CALL TO ACTION

Communities across the country are on the front lines of these shared challenges: natural-breeding extreme weather, fueled by climate change, wildfires and costly energy, and ongoing economic uncertainty. As the pace of change quickens, city and county governments must work to make communities more "resilient": able to bounce back from disruption to a sustainable way and maintain a great quality of life for all. To lead shared efforts:

1. We urge state and federal leaders to support our local resilience initiatives and to take meaningful steps to build resilience and security throughout the nation.
2. We commit to building community resilience through our own local actions, such as the paths to resilience described below.
3. We commit to sharing our solutions, success stories, and overall progress with other local governments through the Resilient Communities for America online platform.

PATHS TO RESILIENCE

CLIMATE PREPAREDNESS

- Establishing local infrastructure to minimize weather and a changing climate, from heat waves and air pollution to droughts and floods.
- Adopting and implementing preparation policies that protect vulnerable populations and coastal resources from extreme weather and other climate impacts.
- Reducing the community's carbon footprint to help avert climate change and avoid the costs of adapting to more severe climate impacts.

ENERGY SECURITY

- Transitioning to a low-carbon energy future to achieve greater energy independence, protect communities from price spikes, and ensure energy reliability during heat waves and other disruptions.
- Implementing energy efficiency programs that help residents, businesses, and municipal governments save money and energy, lower carbon emissions, and reduce demand on the grid during severe weather events.

INFRASTRUCTURE RENEWAL

- Investing in upgrades to community facilities to fully serve the needs of changing communities decades into the future.
- Creating new models to finance investments and manage risks to community assets through engagement with the private sector.
- Harnessing innovation in information technology and green infrastructure to optimize performance and reduce costs through more efficient operations.

ECONOMIC PROSPERITY

- Attracting and retaining investment by safeguarding businesses from extreme weather and ensuring a stable access to energy, water, and other key resources.
- Supporting the private sector in creating more diversified local economies that are more resilient to economic downturns through education in sectors such as clean energy, advanced manufacturing, and local agriculture.

AGREEMENT SIGNATORIES



**More than 130 Signatories
and counting!**

•How to Help?

- Encourage your mayor to sign-on
- Write an op-ed for a local paper
- Write a resilience-themed blog on usgbc.org
- Contact me or Christina Kuo at USGBC
ckuo@usgbc.org



THANK YOU