Post-Sandy: New Paradigms of Resilience

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Landscape Architecture & Design Post-Sandy: New Paradigms of Resilience

How are disaster recovery and resiliency planning influencing landscape architecture and design? New York City community planning cases highlight critical functions landscape architects and designers serve in generating multiple community benefits while reducing climate risk. Processes of innovation, iterative design, and community engagement provide lessons for broader resiliency design applications.

Jamie Torres Springer, HR&A Advisors, Inc.
Overview of Post-Sandy initiatives

Cecilia Kushner, AICP, New York City Economic Development Corporation
NYC Department of City Planning initiatives, including Resilient Neighborhoods & Retrofitting Buildings for Flood Risk

Pippa Brashear, ASLA, SCAPE / LANDSCAPE ARCHITECTURE PLLC
Living Breakwaters for U.S. HUD Rebuild by Design Competition

Barbara Wilks, FASLA, FAIA, W Architecture & Landscape Architecture
Commercial Corridor Resiliency for U.S. HUD Rebuild by Design Competition
Learning Objectives

• Definitions and fundamental principles related to landscape design and planning interventions for disaster recovery and resiliency.

• Resilient design interventions’ benefits, drawbacks, and open questions; techniques for generating resilient landscape design plans; and strategies for combining community programs, facilities, and other benefits with climate risk reduction projects.

• The importance of strategic stakeholder partnerships and outreach channels, including effective methods of community engagement and lessons learned from discussions with residents, local government entities, and affected businesses.

• Translation of resiliency projects designed for the NYC metropolitan region to elsewhere in the U.S.; the integral role of designers and landscape architects in these efforts.
NYC Special Initiative for Rebuilding & Resiliency (SIRR): Strategic objectives

Multi-layered approach combining protection & preparedness

Strengthen coastal defenses
- Complete existing USACE coastal risk-reduction projects
- Expand protections citywide

Protect infrastructure & services
- Harden critical assets & supply chains
- Expand natural infrastructure systems

Upgrade buildings
- Amend building code to strengthen new construction
- Incent investments in existing buildings

Increase neighborhood safety & vibrancy
- Advocate for flood insurance affordability
- Address underlying social & economic challenges

Source: “A Stronger, More Resilient New York”
Courtesy of NYC Department of City Planning
NYC Special Initiative for Rebuilding & Resiliency (SIRR): $60B Coastal Protection Plan

Comprehensive Citywide Systems & Infrastructure

- Coastal Protection
- Buildings
- Insurance
- Utilities
- Liquid Fuels
- Healthcare
- Transportation
- Parks
- Food Supply
- Solid Waste
- Economic Recovery
- Water & Wastewater
- Telecommunications
- Community Preparedness & Response
- Environmental Protection & Remediation

Neighborhood-Specific

- Brooklyn-Queens Waterfront
- Staten Island East & South Shores
- South Queens
- Southern Brooklyn
- Southern Manhattan
NYC Department of City Planning:
Neighborhood-Scale, Resilient Design in Policy & Practice

• Translating retrofits and innovative design for flood resilience into zoning regulations and building typologies
• Resilient Neighborhoods: Strategic zoning changes and infrastructural investments for hyper-local, long-term resiliency
NYC Zoning & Building Code Post-Sandy

2013-Ongoing
Resiliency
Updates to NYC
Building Code

June 2013
Sustainable
Communities Climate
Resilience Studies

October 2013
Citywide Flood
Resilience
Text Amendment

October 2014
Retrofitting
Buildings
for Flood Risk

Ongoing
Resilient
Neighborhood
Studies

- Requires 1-2’ of freeboard over FEMA flood elevation

- Measures building height from Flood Resistant Construction Elevation (FCRE)
- In some buildings and zoning districts, does not count floor space below FCRE as floor area if that space complies with flood-proofing construction standards
Flood Resilience Text Amendment: “Flood Text” 64-00

Remove regulatory barriers that would hinder or prevent reconstruction of storm-damaged properties and encourage flood-resilient building construction throughout flood zones.

• **For existing buildings**, allows home and business owners to elevate and reconstruct their homes, including existing legally non-complying and legally non-conforming structures.

• **For new construction**, allows measurement of building height from the Flood Resilient Construction Elevation (FRCE) and enhances streetscapes through transparency and other design requirements.

New York City’s Department of City Planning recognized the potential for modification of these emergency provisions in the future based on lessons learned in the flood zone.

Courtesy of NYC Department of City Planning
HUD Rebuild by Design: Design for Commercial Building Resiliency in Red Hook

~8 million SF
COMMERCIAL PROPERTY

400,000 SF
RETAIL SPACE IN FLOOD RISK

40%
BUILDING FOOTPRINT IS COMMERCIAL
HUD Rebuild by Design: Scaling for Multiple Levels of Defense in Red Hook

- Innovation through competition and centrality of design to resilience
- Regional resiliency and comprehensive coastal protection
- Targeted neighborhood-level design process
HUD Rebuild by Design: Commercial Building-Level Defense in Red Hook

Container

Freestanding

Party-wall

Historic

Post-industrial

Industrial
HUD Rebuild by Design: Living Breakwaters on Staten Island’s Eastern Shore

- Landscape-scale within different neighborhood contexts
- Relationship of proposal to SIRR and of Rebuild by Design to larger scaled processes
- $60-million winning final proposal for Tottenville, Staten Island
Additional Resources & Further Reading

Overview


NYC SIRR


HUD Rebuild by Design Competition

- Program overview, http://www.rebuildbydesign.org/what-is-rebuild-by-design/

Commercial Corridor Resiliency Project


Living Breakwaters


NYC Department of City Planning