

# COMPREHENSIVE COMMUNITY RESILIENCE CENTERS

Focus Area: The Unidentified and Unexpected

## Team Member Information

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## Executive Summary

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Disaster preparation should not only occur in the days preceding the event, and recovery is not limited to the weeks and months following the event. To create truly resilient communities, preparation must take place months and years in advance of a crisis to develop the physical and social resiliency infrastructure to allow communities to effectively respond when disasters strike. The complex nature of the elements of successful preparation, response, and recovery was demonstrated after Hurricane Sandy by the varied success that different communities had in their response and recovery efforts.

Our team proposes to develop best practices in all the elements that contribute to the development of a comprehensive neighborhood-based Community Resilience Center. We propose to both design a model for new centers, and, perhaps more importantly, describe how its elements can be applied to existing neighborhood community centers, schools and houses of worship. We think of this as including both the “hardware” and “software” of comprehensive preparation and response. The “hardware” side would include elements such as places to sleep, shower, charge cell phones, and coordinate community activities. These issues will be addressed by team members consisting of designers, engineers, architects and developers to consider the physical characteristics of a center as well as the spatial and technical considerations required to provide a responsive and adaptable home for preparation, response, and recovery activities. The “software” includes those elements of personal and social resilience which are understood to truly differentiate the ability of both individuals and communities to cope and rebuild in the face of trauma and crisis. Team members addressing elements of social and personal resilience include a broad range of community groups who have been working to build resilient community leadership, social networks and individual resilience in vulnerable communities including those affected by Hurricane Sandy. The team also includes experts in cognitive and behavioral resilience and professionals who specialize in effective communications and convening to maximize innovation among participants, key components of neighborhood social infrastructure. Our proposal team also includes members who have been active in Sandy recovery networks and as such will bring extensive, current knowledge of best practices in crisis preparation and recovery.

We appreciate that all communities are not the same; therefore we would hope to demonstrate how the best practices developed for a “generic” community resilience center could be adapted for a wide range of communities. We also will seek to make our proposal adaptable to a range of potential crises which could create disruptions in a variety of communities.

## Team Members: Strengths and Robust Experience

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We are very proud of our team members’ specific qualifications and experience which are briefly described in the following sections; however, we wish to highlight general strengths that our team members collectively possess including:

- Previous experience working with other team members. All team members have previously collaborated with at least one other team member and many have worked with more than one team member on more than one project.
- A long history of working with underserved populations with a commitment to community engagement and empowerment.
- Direct experience working in Sandy-affected areas including the Rockaways, Red Hook, Coney Island, Staten Island, the Lower East Side, and New Jersey
- Leadership in networks that mobilized immediately after Hurricane Sandy to respond including the Enterprise Learning Collaborative for Multifamily Housing Resilience, the Lower East Side Long Term Recovery Group, the Red Hook Coalition, the NYC LES Group, NYCVOAD, and ULI Advisory Services Panel
- Affiliations with local and national professional networks working on the cutting edge of developing resiliency design and technologies.
- Experience leading teams consisting of diverse team members to achieve innovative and cross-disciplinary solutions to problems.
- A proven track record in working with public partners to realize aspirational projects that have the power to transform neighborhoods and regions.



## TEAM LEAD

### **Jonathan Rose Companies**

Jonathan Rose Companies is an award-winning green real estate, urban planning, development, project management and investment firm whose mission is to strengthen the fabric of communities. The firm has completed \$1.5 billion of work, much of it in close collaboration with not-for-profits, towns and cities. Founded in 1989 by Jonathan F.P. Rose, Jonathan Rose Companies is recognized for its ability to achieve visionary projects by implementing practical strategies and affordable green urban solutions. Their integrated, multi-disciplinary approach to policy and practice is the key to achieving transformative change. They consistently draw upon their deep knowledge of place-making, real estate, green design, finance, and program management to build vibrant, marketable, healthier and equitable communities.

## ARCHITECTURE/DESIGN

### **Architecture Research Office**

ARCHITECTURE  
RESEARCH  
OFFICE

Architecture Research Office (ARO) received the 2011 National Design Award for Architecture in recognition of the firm's research-based methodology and its distinguished body of work. ARO was a member of the 2007-2009 Latrobe Prize team that proposed redesign of the upper harbor of New York and New Jersey in response to rising sea level and storm surges associated with climate change. For the Museum of Modern Art's Rising Currents exhibition in 2010, ARO, with DLANDSTUDIO, created a vision for lower Manhattan based upon an ecological infrastructure that managed both storm and flood waters. In 2013, for the New York City Housing Recovery Office, ARO analyzed rebuilding and retrofitting homes adversely impacted by super storm Sandy.

### **BrightPower**

**BRIGHT POWER** INC.  
Energy Efficiency & Renewable Energy

Bright Power provides practical energy management and solar energy solutions that save building owners energy, money and time, while improving resiliency. They focus on multifamily residential buildings, enabling them to reduce waste, improve cash flow, achieve energy law compliance, ensure building systems are prepared for disaster and make building occupants more comfortable. Clients include building owners, management companies, developers, contractors, architects, governments and utility companies. Bright Power's strong energy management expertise and proprietary benchmarking software have been applied to over 5,000 buildings with over 250,000 apartments across 48 states.

### **dlandstudio**

**dlandstudio**  
architecture + landscape architecture pl

DLANDSTUDIO was founded in 2005 to reinvent and retrofit urban infrastructure to make it more ecologically productive. Projects range from strategic hybrid economic/design models for capping highway trenches of the Brooklyn Queens Expressway to provide open space for an underserved community, to the nationally recognized design of the Sponge Park at Gowanus to reduce CSOs. Over the last three years, DLANDSTUDIO conducted applied research on storm water management prototypes (patents pending) throughout the region. In 2013 the firm was honored with awards from the New York Architectural League, Urban Design Fellowship of the Design Trust for Public Space, and the AIA Young Architect Award.

## URBAN SUSTAINABILITY CONSULTANT

### **John McIlwain**

John McIlwain consults with developers, non-profits, local governments, and others with a special focus on housing, sustainable development, metropolitan planning, and non-profit organizational development. He is the Director of the Garrison Institute's Climate, Mind & Behavior Initiative (CMB), and has also collaborated extensively with team members Jonathan Rose Companies, PopTech, and Enterprise. John is also a Senior Resident Fellow at the Urban Land Institute. He chaired ULI Advisory Panels along the Gulf Coast after Hurricane Katrina, and is presently the chair of ULI's Disaster Advisory Services Panel for the long term resilience of the New York/New Jersey region following Hurricane Sandy.

## COMMUNICATORS/CONVENERS



### PopTech

PopTech is a global social innovation network and incubator which brings together scientists, technologists, engineers, designers, social and ecological innovators and civic leaders to collaborate on new approaches to some of the world's toughest problems. Through its renowned Fellows programs, it has developed a strong reputation for finding 'unusual suspects'—innovators with extraordinary character and potential—and training them to become more effective leaders, communicators and collaborators. Through its Impact Fund, PopTech incubates breakthrough social innovation and resilience projects around the world. Finally, PopTech's celebrated national and international convenings catalyze this network of world-changing people, projects and ideas.

## COGNITIVE RESILIENCE

### The Garrison Institute



The Garrison Institute develops rigorous, evidence-based programs that help build greater resilience in individuals, communities and whole systems. Their programs integrate contemplative methods such as mindfulness and compassion training with research in cognitive, behavioral and social sciences. Program initiatives focus on training teachers, caregivers, first responders, and sustainability professionals. The institute's Contemplative Based Resilience Training provides a proactive psychosocial intervention that fosters resilience and well being for humanitarian and development workers. The Climate, Mind, and Behavior (CMB) program integrates emerging research about the drivers of human behavior into new thinking on climate solutions, and trains communities on how to shift their behaviors to increase energy resilience.

## COMMUNITY PARTNERS

### CAMBA



CAMBA is one of Brooklyn's largest community-based organizations. Founded in 1977 as a merchants' block association, the agency has grown in direct response to the needs of the Brooklyn community and beyond. Today, CAMBA provides services to 45,000 individuals and families annually through an integrated set of six program areas: Economic Development, Education and Youth Development, Family Support, Health, Housing, and Legal Services. With nearly 70 locations throughout Brooklyn and across the City, CAMBA has deep ties to the communities in which it operates. Through its comprehensive continuum of care, CAMBA provides services which connect people with opportunities to enhance their quality of life.

### Educational Alliance



The Educational Alliance (the Alliance), one of New York City's original settlement houses, was founded in 1889 by a committee of leading German-Jewish philanthropists who wished to offer educational, recreational, social, and cultural services to the waves of Eastern European immigrants who were arriving on Manhattan's Lower East Side. The Educational Alliance strives to address the most pressing needs of communities by erasing barriers to education, breaking the cycle of poverty, improving access to health and wellness services, and feeding, housing, and nurturing some of the most marginalized residents. Educational Alliance offers 38 separate programs at 17 locations. Programs include early childhood education and programs, summer camps, activities and housing for older adults, and a myriad of recreational opportunities.

### Enterprise Community Partners, Inc



Enterprise's mission is to create opportunity for low- and moderate-income people through affordable housing in diverse, thriving communities. They raise and leverage financial resources, advocate for effective policies, and provide programs and expertise to help communities create and preserve safe, healthy affordable homes. For 30 years, Enterprise has been a trusted partner to community-based affordable housing organizations, providing capacity-building support and technical assistance in development, construction, asset management, energy efficiency, and other key areas. Drawing on this deep capacity, as well as our experience rebuilding nearly 10,000 homes in the Gulf Coast following Hurricane Katrina, Enterprise has responded to Hurricane Sandy with a thoughtful recovery effort that bridges immediate response and long-term resilience.



### **Fifth Avenue Committee**

Fifth Avenue Committee, Inc. (FAC) is a community organization in South Brooklyn that advances economic and social justice by building vibrant, diverse communities where residents have genuine opportunities to achieve their goals, as well as the power to shape the community's future. FAC is a nationally recognized non profit comprehensive community development corporation formed in 1978 that works to transform the lives of over 5,500 low and moderate income New Yorkers annually so that we can all live and work with dignity and respect while making our community more equitable, sustainable, inclusive and just. FAC launched our Rebuilding in Red Hook and Gowanus Initiative following Sandy to assist 1-4 family moderate income homeowners with rebuilding and resiliency efforts. Over 700 families that they serve lived in Sandy impacted areas and they administered a grant fund to assist them.



### **University Settlement**

University Settlement, America's first settlement house (1886), began on the radical idea that neighbors from all backgrounds have something to offer a community – and indeed, must. University Settlement evolves regularly to respond to societal needs (engaging over 25,000 people per year) through educational, creative, social service and health programs in 21 sites. Its mission is to empower residents by building on their strengths and knowledge through comprehensive, quality services that meet the current needs of the community; innovation that anticipates future needs; and advocacy. University Settlement staff led post-Sandy outreach, crisis counseling and financial assistance, reaching over 20,000 residents since the storm. The community-building activities embedded within our model are crucially important to building resilience and preparedness, neighbor-to-neighbor, by building, block and neighborhood.

## **Team Members: Selected Relevant Experience and Expertise**

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### **Via Verde / The Green Way**

#### **Team Members: Jonathan Rose Companies and BrightPower**



The team led by co-developers Jonathan Rose Companies and Phipps Houses created a new approach to green and healthy urban living in the South Bronx with Via Verde / The Green Way, the winning response to the New Housing New York Legacy competition. The 1.5 acre site in the South Bronx is located with access to mass transit and other urban amenities. Via Verde's stepped form is inspired by the integration of nature and city. At the heart of the project is a dynamic garden that serves as the organizing architectural element and spiritual identity for the community. The connected green rooftops of low-rise town homes, a mid-rise duplex building, and a 20-story tower are used to harvest rainwater, grow fruits and vegetables, and provide open space for residents. The project also features a health education and wellness center and health oriented retail space, anchored by Montefiore Healthcare, a healthcare organization that brings quality health services to underserved communities.

### **Paseo Verde**

#### **Team Member: Jonathan Rose Companies**



The City of Philadelphia selected Jonathan Rose Companies and Asociación Puertorriqueños en Marcha (APM) to develop a parcel adjacent to the Temple University Train Station. The mixed-use 120-unit rental housing project benefits from access to transit, Temple university, and on-site community services and retail. The building provides a healthy living environment as well as cost savings through sustainable practices such as an energy efficient building envelope and MEP systems, green roofs, photovoltaic panels, and the use of local, recyclable, and renewable materials. The project seeks LEED for Homes and Neighborhood Development certifications. The building's ground floor retail and community service space host uses including a pharmacy, a primary care facility operated by Public Health Management Corporation, and family services by APM.



### CAMBA Housing Ventures

#### **Team Member: CAMBA**

Since 1991, CAMBA has been addressing the City's housing crisis and today this portfolio includes permanent affordable and supportive housing homelessness prevention, housing relocation, emergency and transitional housing. In response to a pressing need for permanent, stable and affordable housing for Brooklyn residents, CAMBA created an affiliated affordable housing development corporation in 2005 called CAMBA Housing Ventures. CHV envisions vital neighborhoods where safe, decent and affordable housing plays a critical role in the long-term economic and social success of lower-income individuals and families. CHV's mission is to develop sustainable and energy efficient buildings that provide safe and affordable housing for low-income and formerly homeless families and individuals.

### Rebuilding Red Hook, Gowanus, and Beyond

#### **Team Member: Fifth Avenue Committee (FAC)**

FAC launched its Rebuilding in Red Hook and Gowanus Initiative following Sandy to assist moderate income homeowners with rebuilding and resiliency efforts. It organizes community efforts focused on over 700 families living in Sandy-impacted areas. With the South Brooklyn Accountable Development Initiative, FAC has engaged thousands of low and moderate income residents in advancing accountable development principals in land use, environmental remediation and large scale development projects. FAC also participates in multiple community collaborations including the Local Initiative Support Corporation assisting homeowners with remediation and resiliency efforts, the Brooklyn Recovery Fund engaged in grassroots community recovery, the Gowanus Canal Community Advisory Group addressing the canal's Superfund clean-up, and the Sunset Park Promise Neighborhood, one of 21 original US Department of Education Promise Neighborhoods. Facing major development projects, policy changes and the challenges of the city's most populous borough, FAC works toward accountability by government and the private sector to ensure that our neighborhoods are more affordable, inclusive, sustainable and livable.

### The City Resilient

#### **Team Members: PopTech, Jonathan Rose Companies, The Garrison Institute, and dlandstudio**



This past June, PopTech along with The Rockefeller Foundation and the Brooklyn Academy of Music convened a network of citizens, stakeholders, scientists, designers, innovators and leaders for a unique summit on urban resilience. The event brought together several hundred participants, drawn broadly from the forefront of community, corporate and governmental leadership, technology, design, urban planning, philanthropy, and many fields of innovation, including participants from across the region, the United States and the world. The focus of the summit was to explore the general dynamics of urban resilience, drawing on the lessons from Superstorm Sandy in New York, and from other disruptions in cities around the country and the world. Like all PopTech gatherings, the event acted as a venue for the thinkers, leaders and doers engaged at the forefront of urban resilience and innovation to connect, exchange ideas, reflect, and collaborate. PopTech's expertise in this subject has enabled them to mobilize people and resources. They are currently in the advanced stages of building a network of regional resiliency specialists throughout the northeast, and particularly the Sandy-affected region (Maryland to Maine). This network of technical specialists, social innovators, civic and citizen leaders bring deep regional experience and expertise to disaster planning endeavors.

## A New Urban Ground

### Team Members: Architecture Research Office and DLANDSTUDIO



The Museum of Modern Art invited ARO and DLANDSTUDIO to participate in their 2010 Rising Currents: Projects for New York's Waterfront exhibition. Based on ARO's previous research into climate change's impact on the city, the exhibition presented the work of five design teams who each reinvented sites throughout New York City in response to rising sea levels, with ARO and DLANDSTUDIO investigating Lower Manhattan. Taking into account rapid polar ice cap melt, scientists predict a six-foot sea level rise by the year 2100, inundating 21% of Lower Manhattan at high tide and flooding up to 61% of Lower Manhattan during a Category 2 Hurricane. To confront these issues, the proposal consists of two basic components that form an interconnected system: porous green streets and a graduated edge. The new conception of a "street" will not only provide productive park space within the city, but will also create a network of absorptive green surfaces. On the edge of the island, three interrelated high-performance systems are constructed to block higher sea levels and mitigate storm surge force and flooding: a productive park network, freshwater wetlands, and tidal salt marshes.

## NYC Housing Recovery

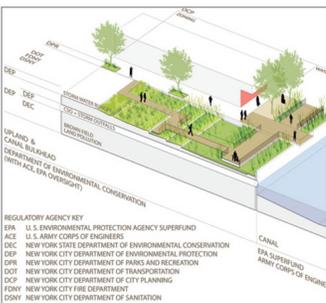
### Team Member: Architecture Research Office



For the New York City Housing Recovery Office, ARO was part of a team that developed rebuilding and retrofitting analysis of homes impacted by super storm Sandy. This work defined strategies for renovating and/or replacing New York City's housing stock to meet new code requirements within areas affected by revised FEMA flood maps. Based upon GIS mapping of approximately 56,000 affected residential units, ranging from single family detached homes to multifamily apartment buildings, twenty individual case studies were selected for detailed analysis and costing. This included representing pre-storm conditions, developing modifications to comply with new advisory base flood elevations, and creating visualizations of neighborhood impact of these changes. The work identified many social and physical implications of climate change adaptation in New York City, including impacts to zoning regulations, financial investment and quality of life. The information produced is helping New York City to make decisions regarding rebuilding in the areas affected by the storm and within waterfront areas generally.

## Gowanus Canal Sponge Park

### Team Member: DLANDSTUDIO



Originally a large marshy wetland area, Gowanus has a rich history as the site of early Dutch settlement, Revolutionary War battles, and industry. Planners envision the area as a new site for large residential development – a controversial proposal in the face of climate change. Working closely with local community organizations, agencies, and elected officials, dlandstudio initiated and designed a new kind of public open space, a Sponge Park™. The Sponge Park™ equally values the aesthetic, programmatic, and productive importance of treating contaminated water flowing into the canal, an EPA Superfund site. The park is designed as a working landscape, proposing strategies to divert excess storm water run-off for use in the public park along the canal, thus reducing the load into the sewer system. The plants and engineered soils included in the design draw heavy metals and biological toxins out of contaminated water. Proposed floating remediation wetlands incorporate a mixture of organisms that absorb or break down organic toxins, heavy metals, and biological contaminants from sewage. DLANDSTUDIO raised all of the project's design and construction funding from various local, State, and Federal entities.

### Manny Cantor Center

#### **Team Member: Educational Alliance**



Educational Alliance is currently doing a gut renovation of its historic flagship building to create the Manny Cantor Center. By incorporating visionary design and impressive space planning, the gut renovation is transforming the building from a deteriorated, inefficient community service facility into a modern urban community center to serve Manhattan's Lower East Side. The building's elevators, kitchens, and other systems will be entirely replaced with highly energy-efficient infrastructure, and the project aims to obtain a LEED rating. The project will maximize space for programming, including: early childhood learning classrooms; a comprehensive health and wellness center hosting innovative group exercise classes, personal training, locker rooms, and showers; and space for the arts, cultural events, performances, lectures, ethnic celebrations, and programs for all ages.

### Lower East Side Long Term Recovery Group

#### **Team Members: Educational Alliance and University Settlement**

Recognizing both the gaps that existed in our LES community response to Sandy and the incredible spontaneous work during that time, the Lower East Side Long Term Recovery Group formed as a coalition of community groups and institutions to cooperatively coordinate their resources, preparedness planning and training in the event of future disasters. Their work focuses on Manhattan's Community District 3 area, and the immediately adjacent neighborhoods. Future disasters may be events that disrupt residents, power, communications, and transportation; cause shortages in basic goods and services; and threaten life or the community's built environment. The LES LTRG works to ensure that even the most vulnerable in the community are prepared, trained for and recover from disaster. This includes formulating, coordinating and providing for the dissemination of information related to Disaster Response and Preparedness, providing for a long-term recovery and mitigation plan in response to Sandy or future disasters, and advocating for additional long-term assistance in the wake of Sandy or future disasters to the most vulnerable affected.

### Sandy Recovery and Rebuilding Programs

#### **Team Member: Enterprise Community Partners, Inc**

Within two months of Hurricane Sandy, Enterprise provided \$305,000 in grants and technical assistance to 18 affordable housing organizations in New York and New Jersey, serving 750 low-income families. Enterprise will continue to support affordable housing organizations, with their Learning Collaborative for Multifamily Affordable Housing Resilience serving approximately 13,600 households to strengthen their disaster preparedness skills, improve resilience, and work collaboratively to identify best practices for resilience in the multifamily affordable housing field. Enterprise also helped inform the allocation of critical recovery resources by providing data about the impact of the storm on low-income families. They will continue to provide decision makers with data analysis about the effectiveness of the recovery work plans and resources, and how they meet affordable housing needs. Additionally, Enterprise is playing a leading role in For a Resilient Rockaway (FAR ROC), a design competition seeking innovative ideas for the development of an undeveloped, 80-plus acre City-owned site in the Rockaways, Queens.

### Cognitive and Climate Resilience Programs and Collaborations

#### **Team Members: Garrison Institute and John McIlwain**

The Garrison Institute develops various programs that bridge science and contemplation as a powerful strategy for developing new resiliency skills, leadership and social innovation – often collaborating with other organizations. With neuroscientists at Emory University, The Garrison Institute is developing an evidence-based theory on resilience and applying it in their Contemplative-Based Resilience Training for professionals in high-stress fields. Similarly, their Climate, Mind, and Behavior Initiative (CMB), directed by team member John McIlwain, collaborates with the Urban Sustainability Directors Network to create tools that can be used to optimize energy-savings strategies in regions around country. Follow-

ing these collaborations, professionals bring new research and skills into communities and workplaces, where they are having profound impacts.

## Conceptual Approach

### INTRODUCTION

When blackouts, heat waves, floods, cyber-attacks, and other disruptions strike, residents turn to nearby community centers and community institutions for water, food, showers, electricity, healthcare, a safe place to sleep, and other support. These centers may be local churches, elementary schools, clinics, or neighborhood centers which during the response and recovery periods become de facto “Community Resilience Centers”. As the volatility and intensity of climate-related events will likely increase throughout the 21st century, we propose that cities prepare these centers to better serve their communities throughout the entire life cycle of an event, from preparation for an emergency response through full recovery.

Our goal is to develop a framework including elements of the design, programming, and systems that can be applied to newly-built centers or used to retrofit existing community centers. This framework will provide comprehensive and implementable recommendations to enhance the capacity of communities to prepare for, respond to, and recover from disasters or emergencies. This highly implementable concept can function on many different scales to create more resilient communities. It also could be immediately applied to a specific site in order to develop a prototype project of an operational full-service community resilience center.

### CRISIS EVENT: LIFE-CYCLE PLANNING

Establishing resilient communities cannot effectively occur immediately prior to a disaster. The preparation should ideally take place years in advance, and recovery should inform future preparations. We propose that Community Resilience Centers support a process of preparation, response and recovery, including:

1. Long Term Preparation
2. Immediate Preparation (if advance notice is available)
3. Event
4. Post Event Recovery
5. Long Term Recovery

Community Resilience Centers process of preparation, response and recovery



This process is cyclical in nature, with the recovery period incorporating “lessons learned” into the next phase of long term preparation. We propose to develop a network of Community Resilience Centers to serve as the focal point of this process for their neighborhoods. These centers should be interconnected so that they can share lessons learned amongst each other, allowing them to collaboratively advance the understanding of how to balance physical, programmatic, leadership development, and social infrastructure as required for truly resilient communities.

### RESILIENCY “HARDWARE” AND “SOFTWARE”

We think of effective resiliency planning as including elements of both the “hardware” – the physical locations where preparation, response and recovery take place – and the “software” – the development of programs and networks that promote both individual and social resilience.

The “hardware” aspect addresses the development of new facilities or hardening of existing centers such that they can survive an event and continue to operate during and immedi-

ately after the chaos of an event. These physical centers provide the underpinning for the effective preparedness and response of a community. When properly designed, they can serve not only to enhance a community's well-being during an event, but also to provide the services to strengthen a community's resilience before and after an occurrence.

The components:  
Hardware & Software

#### Hardware

- Structures
- Back-up power
- Passive design elements
- Resilient communication networks
- Flexible spaces

#### Software

- Personal crisis training
- Community preparation
- Association with networks
- Joint planning with public + NGO's

Although it is crucial to understand how to create the physical “homes” for resiliency activities, the critical importance of the “software” elements – programs to promote individual and social resiliency – has become apparent in relation to holistic resiliency strategies. The social infrastructure of communities is not always observed and is easily forgotten – until disaster strikes. Dynamic social interaction is facilitated through long-term capacity and relationship building. A social resiliency strategy must build upon the existing capacities of organizations in the specific communities in which they are located, allowing for new methods and process infrastructure to be built upon existing systems. This strategy provides an opportunity to reinforce social cohesion, while introducing new programs and initiatives that can provide populations with the necessary physical and emotional tools to better cope with disasters.

During times of crisis, even the best plans may not be suited for the circumstances. Neighborhood leaders are essential to respond to the facts on the ground. Training leaders in advance to develop their cognitive resilience under stress dramatically improves their ability to respond with equanimity and compassion during times of crisis. Part of our “software” strategy will include the development of communications and convening systems to activate individuals, as well as educational programs to enhance the capacity of individuals to function effectively during a time of crisis response.

### COMMUNITY RESILIENCE CENTERS: SHIFTING ROLES DURING THE STAGES OF A CRISIS EVENT

Based on our analysis that parses a crisis event into preparation (long term and immediate), response, and recovery (immediate and long term) we envision that the activities of a Community Resilience Center will respond to the various stages of an event.

The preparation phase is ongoing. The Center will serve as a place for neighborhood resilience planning and training in emergency services such as CPR and rescue. It will also serve as a center for preparations such as developing neighborhood response tools including phone and address lists, contact trees, neighborhood watches and stockpiling supplies. The center will also provide community leadership training and cognitive resilience training, to prepare leaders to be able to function proactively, strategically and compassionately during emergencies. Importantly, the centers will also provide the point of intersection between the public sector and local community to design a coordinated response strategy. An indirect result is that building this capacity strengthens the social fabric of communities, with benefits that also accrue in non-emergency times.

Immediately before and during a crisis, the Center will function as both a neighborhood information “nerve” center and an emergency shelter. It will serve as the pre-determined location for a coordinated response by the public sector and NGO's. It will provide hot showers, cell phone and computer charging and access to internet (via multiple pathways such as fiber optics and satellite). It will provide places for emergency sleeping, as well as food storage, preparation and service. It will have a health clinic, ready to be staffed by emergency responders.

During the recovery, the Center will help residents apply for aid and coordinate insurance requests. It will aggregate neighborhood purchasing power, provide rebuilding project management services, advise on how to rebuild resiliently and help prevent “scams” that seek to take advantage of affected residents. It will serve as a node in a learning network of community centers. Finally, it will serve as the point of memory, so that lessons learned

can be incorporated into preparation and planning for future events.

## PROPOSAL WORK PLAN

This project has three components: design, programming and networks. Each of these components plays a role in the preparation, response and recovery to a crisis.

### Design and Physical Resiliency Elements:

Resiliency activity occurs in physical places. These physical places can include established venues such as existing community centers, which serve as centers for resiliency activities, and adapted places such as churches and schools. Each location requires similar “hardware”, which we define as the physical requirements for resiliency.

The prototype Community Resilience Center will be designed to host vital community health care, education, job training, community planning, social networking and other neighborhood activities. Functional spaces may include classrooms, a health clinic, an operations center, large bathrooms with showers, and a community co-working center. The program will include facilities for the phases of resilience described above, and will also include storage space for short term emergency supplies.

The Center will be designed to extremely energy efficient *passive house* standards, so that it functions well in situations when utility services are limited or absent. It will be able to generate its own electrical power with rooftop solar, tap into battery storage and be supplemented by a generator. It may be cooled and heated by ground source heat pumps, to reduce reliance on vulnerable fuel supply chains.

### Programming: Individual and Social Resilience

The most important work of the center will take place before emergencies, by building strong neighborhood social networks and training local leaders in community building and emergency skills. It will also prepare local community organizations to coordinate and work efficiently with public and NGO aid groups immediately after an event. These skills will include cognitive resilience training, so that leaders have the capacity to lead with calmness, flexibility, resourcefulness and compassion during times of high stress.

### Networks: Local and Regional

The Center will serve as the hub for a platform of neighborhood systems. Some of these will be traditional, such as designating and training block and building captains. Others will use crowd-sourced information, citizen-generated apps, geo-tagged locators etc. to enhance community resilience. The center will integrate not only these traditional and emergent systems, but also their cultures of use.

One of the lessons of the response to Sandy was the recognition that communities are stronger if they can tap into recovery resources which will be coordinated on a municipal or regional scale. Therefore, in addition to serving as the center for local, neighborhood-scaled networks, the Center will also serve as a node in a larger network of emergency preparedness. This will allow for effective knowledge throughout the life-cycle of an event and also assist public and NGO relief organizations to efficiently and effectively allocate resources. Emerging communication technology will be an important tool to enhance communication efforts within the community, as well as a way to disseminate information in real time to other centers in the region.

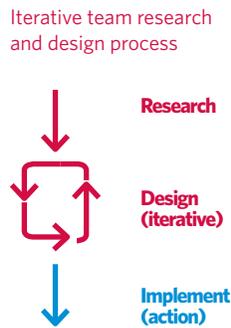
## PROPOSED WORK PLAN PROCESS

The starting point for our exploration of critical elements that will result in an effective community resilience center is the experience our team members already have in the exploration of design and technical solutions along with expertise in developing individual and social resilience. We are energized by the range of perspectives our team members

Three key components in the preparation, response and recovery to a crisis



bring to our process as well as the know-how that our team members have in managing diverse teams towards promoting cross-fertilization and innovation. We envision an iterative team process of research, discussion and testing assumptions to arrive at those that will be most effective and implementable.



Through our baseline knowledge, we believe our team is uniquely qualified to actively participate in the Stage Two Research and Analysis phase of the RFP process. This team has the experience and diversity to both arrive at new insights through the process and also contribute ideas into the process to the benefit of the other design teams. We are also excited about the network of resiliency groups that our team members already participate in which can serve as a source of ideas and can also immediately serve as a network through which our insights can be shared.

A critical element of our work process will be synthesizing the more specialized aspects of the sustainability “hardware” and “software” expertise of our team members to discover how the different elements of sustainability can mutually reinforce one another to arrive at a whole that is greater than the sum of the parts. We can imagine discussing scenarios where the organizing expertise of our community and communications experts can effectively convene groups of neighborhood residents in a new or renovated space which incorporates best practices in physical resilience planning. We can learn from our team members how these neighborhood residents – after participating in trainings to help them personally cope with the anxiety associated with crisis planning – can most effectively be guided to work together with one another and with the public sector to effectively prepare for an emergency. Finally, we can understand the best methods to build upon the community connections generated by this joint preparation to most effectively respond when an event occurs.

### CONCLUSION

Although a natural reaction to discussions of crisis preparedness is often anxiety and dismay with existing systems, one of the lessons emerging from the Sandy response is that coordinated and thoughtful preparedness activities can have a direct benefit of strengthening the social cohesiveness and quality of life in a community – before, during, and after an event.

Building resilient communities results in strong communities



Current research in green building technology and alternative energy production is yielding implementable solutions to cost-effectively build or retrofit community centers to increase their resilience. Likewise, advances in cognitive theory are yielding new methods for enhancing the capacity of groups and individuals to manage stress and trauma. Finally, emerging communications technologies combined with emerging information strategies, such as enlisting big-data and crowd-sourcing, are yielding powerful new tools for both community building and managing complex operations. Our proposal seeks to build upon these concepts, as well as research that has emerged in response to recent crises, to create a framework for effective Community Resiliency Centers. We believe that this framework could be implemented immediately in a site-specific location to create a pilot project for effective resiliency planning.

This proposal is designed to dovetail with the work of local agencies such as the NYC Office of Emergency Management (OEM), and Federal Agencies such as FEMA and HUD, to expand their capacity to be effective at both the neighborhood and regional scale. Our team hopes to have the opportunity to work with HUD and other public and private agencies to develop a model that can promote both security and neighborhood well-being in a broad range of communities.