BUILDING RESILIENCE

Scaled strategies for healthy community design

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" The local approach recognizes and celebrates that the places where we live matter, and that our lives are impacted both for the better and for the worse by these places."

Resilience is "the capacity of individuals, communities and systems to survive, adapt and grow in the face of changes, even catastrophic incidents."[1] The emergence, and growing prevalence, of the concept of resilience as a tool to drive design and measure the quality of our cities and our societies re-positions the social, economic, cultural, and political factors that drive urban decision-making away from sheer capital accumulation to more human-centered and ecological approaches. Resilience does not drive economies, or make a location a global city. It is an inherently grounded concept; in other words, resilience is grounded in the cultural, ecological and social capital of a place.
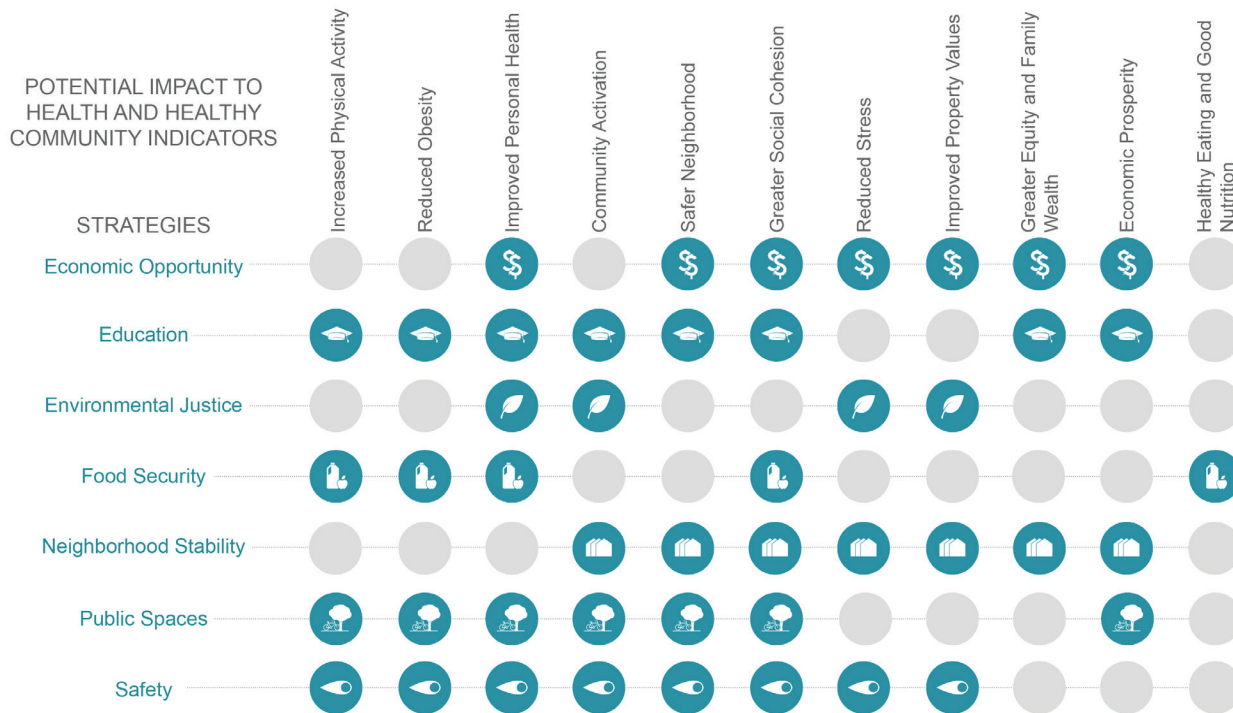
Cities that are exhibiting the greatest resiliency are cities poised to address both the metropolitan scale with creative and innovative approaches to public design projects that boost economic competitiveness and global appeal, while simultaneously addressing the local scale with urban design projects, programmatic interventions, and policy decisions that improve equity, the quality of the everyday life of the city, and the health of residents. Between these two scales—the global landscape of meta-data and special economic zones and the local environment of bottom-up growth and community activism—is an intermediary role for design and urbanism that is too often missing.[2] Design can connect data and policy to experience and projects with the potential to transform spatial practices and affect transformations in space that lead to positive change. This is the missing link, the connective tissue for designers to contribute to both macro and micro-level change in cities around the world.

Gradually, the quest for the global city is being partially eclipsed by the possibilities and potentials of a beautiful and equitable everyday city. The local is being re-positioned as a focus for investment and intervention, and while not necessarily replacing the global, at least competing with it. In many ways a local approach is by necessity a systemic approach to change, a method that focuses on the interconnectedness of conditions and most of all, process and engagement.

The local approach recognizes and celebrates that the places where we live matter, and that our lives are impacted both for the better and for the worse by these places. As a result, health and equity are two fundamental parts of resilience. In cities across the globe, health has become a major priority. In Korea the "Healthy City Project" initiated in 2004 focused on Changwon City, Wonju City, Seoul and Jingu, and Busan. By 2010 55 cities were part of the project focused on building health-oriented cities.[3] In Korea, the United States, and across the globe the socio-economic context of place—income, housing, education, and employment—is more often than not directly correlated to the health of the people that call it home. Some places are rich and others poor, some areas have plentiful food and fresh water while others are food deserts, some places have well-maintained parks while others are without even basic infrastructure, and some places thrive while others decline.

Design has a role to play in imagining, advocating for, and creating healthy communities. To this end and over the course of nearly two years of study, the Community Design Resource Center at the University of Houston

POTENTIAL IMPACT TO HEALTH AND HEALTHY COMMUNITY INDICATORS

STRATEGIES

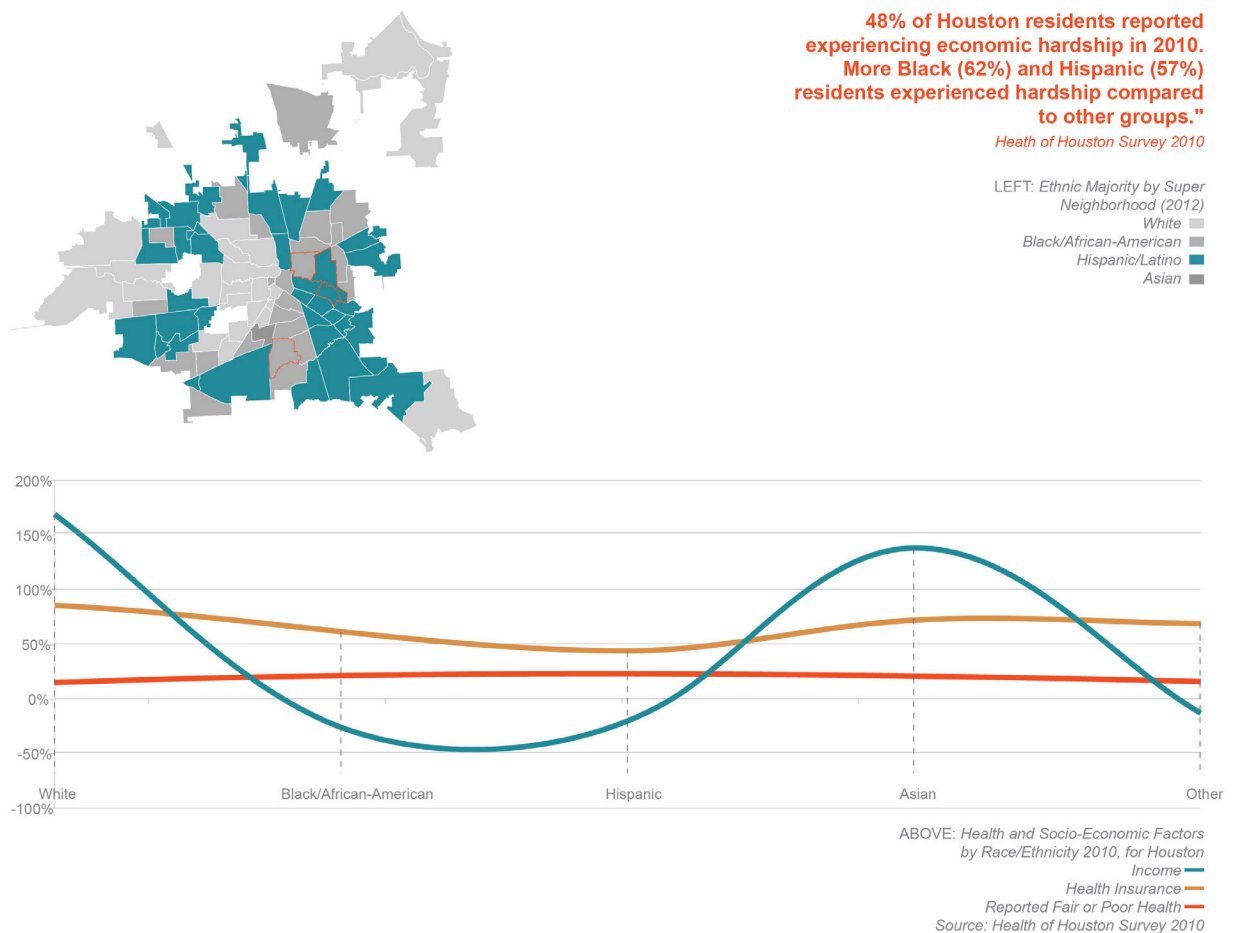| STRATEGIES	Increased Physical Activity	Reduced Obesity	Improved Personal Health	Community Activation	Safer Neighborhood	Greater Social Cohesion	Reduced Stress	Improved Property Values	Greater Equity and Family Wealth	Economic Prosperity	Healthy Eating and Good Nutrition
Economic Opportunity			$		$	$	$	$	$	$	
Education	🎓	🎓	🎓	🎓	🎓	🎓			🎓	🎓	
Environmental Justice			🍃	🍃			🍃	🍃			
Food Security	👍	👍	👍			👍					👍
Neighborhood Stability				🏠	🏠	🏠	🏠	🏠	🏠	🏠	
Public Spaces	🌳	🌳	🌳	🌳	🌳	🌳				🌳	
Safety	👁	👁	👁	👁	👁	👁	👁	👁			

worked in partnership with four Houston neighborhoods and the Department of Health and Human Services to identify the determinants of health that can be impacted by design. The project worked across scales, from the city, to the neighborhood, to the block, to the lot; and across issues, from policy, to planning, to programs and projects. At all scales, resilience was an end goal. The proposals range from re-positioning and re-program-ming infrastructure systems to meet community needs, to re-thinking the uses of public facilities, to creating food networks. The proposals fit within a framework of seven broader strategies that are connected and syner-gistic. The strategies—education, economic opportunity, environmental justice, food security, neighborhood stability, public space and amenities—directly link the quality of the built environment to health. The strategies emerged from a "thick" investigation of the conditions in the four study neighborhoods—for example, understand-ing the relationship between educational attainment, median household income, and obesity rates—and from a further analysis of systemic connections (Figure 1).

We found that parks and open spaces, good public infrastructure, density, and community centers were important indicators of health. Access to healthy food, or food security, is equally important. We looked at new single-family housing permits to understand locations of and constraints to new development in the four neigh-borhoods and across the city. Overall, we looked at the interconnectedness of both the existing conditions and opportunities for neighborhood transformation, work-ing to develop synergies between the seven strategies, across the interventions, and across scales. In concrete design terms this means connecting programmatic

FIGURE 2. Relationship of economic opportunity to education and health

LEFT: *Ethnic Majority by Super Neighborhood (2012)*
White ■
Black/African-American ■
Hispanic/Latino ■
Asian ■

ABOVE: *Health and Socio-Economic Factors by Race/Ethnicity 2010, for Houston*
Income ▬
Health Insurance ▬
Reported Fair or Poor Health ▬
Source: Health of Houston Survey 2010

interventions and local projects to broader infrastructure and landscape interventions to generate a network of hybridized buildings and infrastructural systems that lead to greater resiliency, equity, and health.

Re-Localization: From Global Capital to Local Markets

Healthy communities depend on healthy economies with equity and opportunity. UNHabitat notes that "high levels of inequality do not just hamper poverty reduction and economic growth—they impact all aspects of human development."[4] In 2012 the World Economic Forum identified rising inequality as one of the top global risks.[5] Too often opportunity is unevenly distributed across space and therefore people are penalized for where they live.

Economic opportunity is directly connected to education and health, and the healthiest communities have greater equity (Figure 2). For example, a recent study completed by the Clark County Public Health Department for Portland Oregon concluded that economic opportunity is critical to both the health of individuals and to community-wide health. The study notes, "education and employment increase individual income, leading to improved individual health, community prosperity, and income equality. These all lead to greater community health, which feeds back into improved opportunity for education and employment."[6]

Health, equity, and opportunity should be embedded in community and urban design and development strategies. In our four study neighborhoods there are few sources of employment and many basic shopping and

services needs are met outside of the community. For example, in one neighborhood residents spend $22 million annually outside of the neighborhood on groceries and other goods. While design does not typically drive economic opportunity, there is little doubt that design has the power to generate new ways of thinking about how things are done, specifically by creating connections between neighborhood assets and economic opportunities. This can mean building on the history and culture of places to develop programming with the potential to create real change. For example, in the Sunnyside neighborhood with a strong farming and ranching history a series of programmatic interventions were developed to build on and support this culture. The proposed programs include horse stables, an arena, and sixteen miles of continuous riding trails that take advantage of existing utility, bayou and drainage easements. It is one part projective programming and one part a landscape urbanism strategy that adds program to existing infrastructure systems. The idea is based on the Federation of Black Cowboys in New York City that operates Cedar Lane Stables with approximately 40 horse stalls. In addition to the stable, the Federation provides horse, pony, trail, and wagon rides, riding lessons, picnics, parties, and other events.

Re-Thinking Public Investment: New Centers

There is a clear statistical correlation between education and income, and both impact health, quality of life, and opportunity. While other areas of the world invest in education, technology, and innovation, the United States lags behind. In Houston, 25% of the population has not finished high school, and in one of our study neighborhoods the number is 62%.[7] Public school facilities represent the largest collection of public facilities in the United States. According to the Center for Cities and Schools at the University of California at Berkeley, "the buildings contain an estimated 6.6 billion square feet of space on more than one million acres of land." The Center reports that there is a growing interest in creating innovative joint-use programs for neighborhood schools,

because, "It is one way to expand services for children and families, increase opportunities for physical activity and healthy living, and provide additional educational, cultural, and civic uses."[8] The Center's list of potential joint uses include gyms, outdoor recreational spaces, libraries, performance venues, cafeterias and kitchens, and meeting spaces.

Houston's demographic shifts, changing housing patterns, and new school capital investments present an unprecedented opportunity to reshape the ways local government and schools work together to provide for the people who depend on them and the resources they manage. This is especially important for low-income, low-resource urban communities that disproportionately struggle to meet community needs. To this end, developing strategies to share public facilities, such as joint-use schools, is one way to work towards healthier communities.

Food Networks

In a city of plenty, there is far too much scarcity. In 2010 nearly half of all Houston residents reported experiencing economic hardship, meaning that they had trouble paying their rent or mortgage or buying food.[9] Food is a basic human necessity, and the accessibility of fresh and nutritious food can substantially impact health. A recent study by the Food Trust organization concluded that Houston had fewer grocery stores per capita than other major cities in the United States. Sunnyside, home to over 21,000 residents, has only one major grocery store. Over 50% of residents are more than a mile from this grocery store and 25% of households do not have access to a vehicle. Yet, fast food is readily available; there are seven fast-food restaurants in one two-block area.

Sunnyside residents have higher rates of death from heart disease, cancer, stroke, diabetes, accidents, and kidney disease than the average Houston resident. Specifically, Sunnyside residents are 1.5 times as likely to die from heart disease as an average Houston resident.

FIGURE 3. Improving food security through a healthy food network

Food grown at community gardens would be distributed to local corner stores and area schools

Community gardens and farms grow vegetables and fruits

Fresh vegetables and fruits are distributed to neighborhood schools and corner stores

Residents have access to healthy, nutritious foods

These health statistics underscore the necessity to develop strategies that address conditions that can lead to poor health, including lack of exercise, nutrition, and access to healthy food.

In Sunnyside we looked at what it would mean to connect local community gardens and farms to corner stores and neighborhood schools as a means to improve food security (Figure 3). This involves connecting the three existing community gardens, the farm at Pro-Vision charter school and the efforts of Can-Do Houston to develop healthy corner stores. The food network would be further supported by identifying vacant lots and land for new farms and gardens while also exploring the potential for establishing a grocery co-operative. The goal of the network is to improve accessibility to fresh food across the neighborhood, improving food security.

Linked Landscapes

Parks and open spaces that are easily accessible to residents, safe, and well-maintained have a substantial impact on the health of a community. Studies have found that children who live within two-thirds of a mile from a park with a playground are five times more likely to have a healthy weight. Today, one out of three children in the U.S. are overweight or obese.

A recent study of parks and open spaces in Chicago illustrated that easy access to green space reduces violence and leads to a better quality of life. Specifically, the researchers at the Human- Environment Research Laboratory of the University of Illinois at Urbana-Champaign found that green spaces, when adjacent to residential areas, create neighborhoods with fewer violent and property crimes and where neighbors tend

FIGURE 4. Green corridors in the public space enhance connectivity
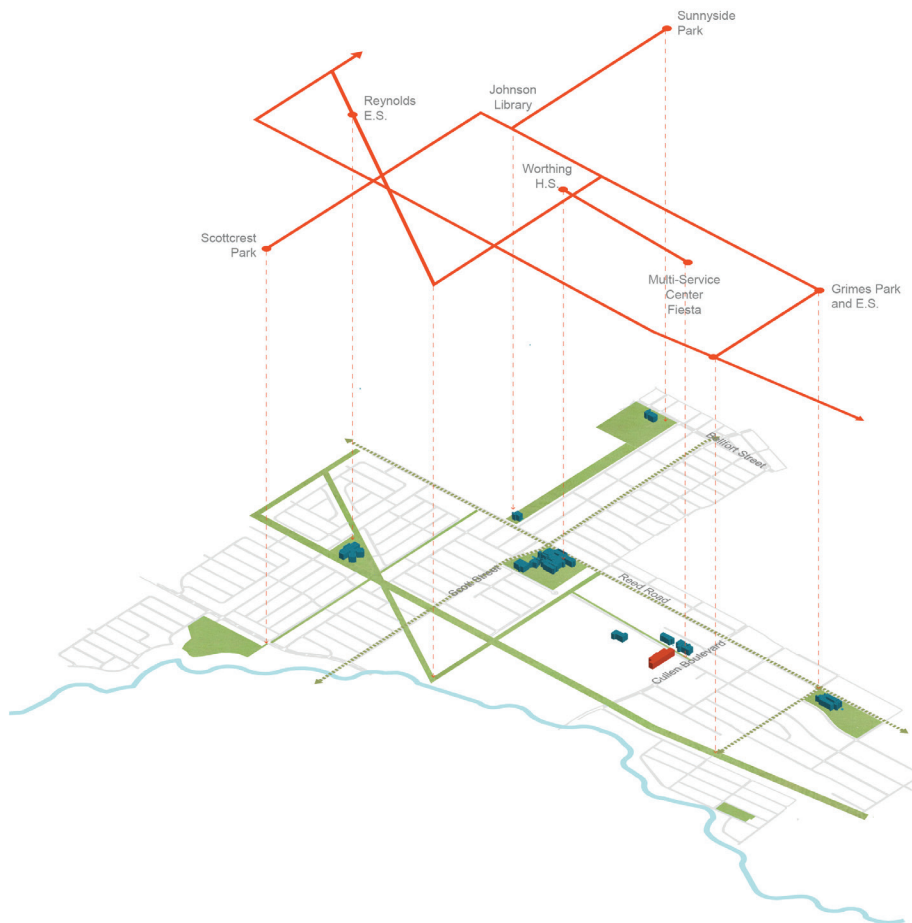
A network of green corridors will enhance walkability and connectivity in the neighborhood

to support and protect one another.[10] The researchers concluded that park-like surroundings increase neighborhood safety by relieving mental fatigue and feelings of violence and aggression that can occur as an outcome of fatigue. Other researchers who are conducting similar studies across the country are finding similar results. High-quality parks also spur economic development by attracting home buyers and boosting residential property values by as much as 15%, meaning greater wealth for residents and increased revenues for cities.

By capitalizing on existing systems of easements and right-of-ways a network of walking and biking trails can connect residents to important destinations such as parks, schools, health care, and jobs, improve connectivity particularly for residents who depend on transit and walking for mobility, increase access to resources, and encourage people to exercise (Figure 4).

Conclusion

Across our cities, there are leaders, organizations, and institutions looking for new ways to achieve equitable, comprehensive, and sustainable change. The renewed interest in a holistic approach is reminiscent of the original community development legislation passed in 1968 that focused simultaneously on political empowerment, education, the arts and culture, housing and economic development, and social equity and opportunity.

In response to this re-focusing of efforts it is vital that we find new ways to work across disciplines, scales,

FIGURE 5. Approaches at Sunnyside work across disciplines and scales

$22 million is spent on goods, including groceries, outside of the neighborhood each year.

Developing co-operatives and building on local markets can create economic opportunity

Economic Opportunity

$119,825 Professional Degree
$75,568 Bachelor's Degree
$38,976 HS Graduate
$24,797 No HS Diploma

Public Spaces

Children who live within **2/3-mile of a park** are **5Xs** more likely to **be a healthy weight.**

Education

25% of residents without a high school diploma

1990 2000 2010

Environmental Justice

Within One Mile
8 Toxic Release Inventory Facilities
3 Large Quantity Generators of Hazardous Waste
2 Major Dischargers of Air Pollutants
1 Facility which treats, stores or disposes of hazardous waste

Nearly one of every three children in the U.S. are overweight or obese

Food Security

Neighborhood Stability

Home Ownership

60% **54%** **46%**

1990 2000 2010

Home ownership has declined **23%** over the last twenty years

Over 50% of residents are more than a mile from the grocery store.

25% of households do not have access to a vehicle.

Safety Sunnyside residents have a **1 in 11** chance of being the victim of a crime.

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and issues to develop innovative strategies for positive change in our communities (Figure 5). This means affecting policy decisions at both the national and local levels, and swaying the dialogue and the funding streams towards equity and resilience. It means transforming localized public investments and planning decisions as a means to create more equitable neighborhoods and communities and the opportunities that they hold. And it means moving away from what has always been done, and instead developing new and innovative projects and programs that maximize investment in and use of public facilities and other publicly funded work.

We must look for new models of economic development such as co-operatives to improve food security; find new ways to develop quality affordable housing, for example

by mixing models and programs; create new opportunities for us to come together as citizens, not as consumers; identify existing skills and resources in our communities as a means to shape and create new jobs; enhance access to open spaces, recreation, and trails as means to build healthier communities; and work towards achieving sustainability in its fullest and most meaningful definition, which includes achieving a balance between equity, economy, and ecology in all that we do.

Participatory, proactive, and asset-based community processes are the foundation upon which a framework of new policies, planning strategies, and projects can be created to generate meaningful and sustainable change that supports and buttresses the goals of greater equity and resilience across the diverse landscape of our cities.

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