AIA Florida

STRATEGIC COUNCIL REPORT

2020

AIA Florida
2020 Strategic Council Report
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EXECUTIVE SUMMARY & COUNCIL RECOMMENDATIONS

AIA Florida

Throughout this "Year of COVID," the Strategic Council met remotely and engaged with a disparate group of subject matter experts (SMEs) under the broad umbrella of resilience, including economic, climate, sociological and digital resilience. Several recommendations were formulated for consideration by the Association for future implementation to support its membership and society. The Council's conversation began by identifying which elements of resiliency are relative to design professionals.

The following topics were discussed as the key elements for architect-led design intervention possibilities:

Climate
Wind – hurricanes, tornadoes
Water – too much or too little, flooding, drought, pollution
Geology – earthquakes, landslides
Temperature – too hot or cold

Sociological
Diversity, Inclusion, Equity
Belonging
Intimacy, Friendship, Recreation
Upward mobility

Economic
Market fluctuations
Access to jobs
The changing architectural "office" models

Health
Biological Resiliency - Communicable Disease
Obesity – Active Design
Nutrition, Food supply
Mental & Physical Wellness
Pollution

Challenges abound in a state reliant upon a low-wage earning population seeking affordable, resilient housing in a delicate ecosystem bordered by water with limited physical growth potential. Optimizing the availability of knowledge will serve to guide informed decisions by our profession and improve our contribution to society. How do we create a more equitable, resilient and attainable built environment that meets the needs of a growing population? This understanding is essential to energize architects in the most proactive way. The following SME's energized the conversation:

Katrinell Davis, Ph.D., led a presentation titled *Resilience Planning for 21 Century Families, Trends and Strategies for Florida's Underserved Communities*. She reviewed how environmental injustice impacts the working poor, minorities and others as they are relegated to undesirable locales through practices such as redlining, unfair land-use planning and zoning. The bottom line is inequity by design can be cured by design and regulatory advocacy.

Presenting *Design Innovations for Resiliency and Regeneration*, Vivian Loftness, FAIA and LEED Fellow, University Professor and Paul Mellon Chair in Architecture at Carnegie Mellon University gave an overview of myriad priorities architects face. Her presentation concluded with working examples of dense European community development models that are resilient, replicable and responsive to the needs of multi-generational and multi-cultural populations.

Representatives of Autodesk provided a wide-ranging conversation on Big Data's influence on the AEC industry focusing on how technology and data impact the industry of *making*. Unquestionably, technology is disrupting or has disrupted the design practice. While Big Data is informing decision-making and may even appear to have removed the human touch out of the design realm, the speakers insist, technology is simply a tool and an invaluable design team member capable of increasing speed, reliability, predictability and reducing liability. And, truth be told, although Big Data, machine learning and Artificial Intelligence are changing the future of *making*, only humans will decide what problems to solve, what goals to reach and factors to input in solving problems. Having said that, digital transformation in firms is occurring at different levels of accessibility based on affordability and at various speeds of adaptation.

Leaders from the Florida Urban Land Institute (ULI) joined us for a session focused on resilience from the future perspective. ULI representatives are exploring place-based solutions to future climate challenges such as aquatic transportation and the adaptation of current infrastructure. Conceptually, there is significant reason to believe that entire communities will face relocation as their best and last solutions. How does such a relocation get adequately planned? How do the new communities continue to mirror their prior cultures? The Council recognized the benefits of joint work with ULI due to its diverse membership of design professionals, developers, real estate brokers, land use attorneys, contractors, public leaders and others and their focus on these issues. The ULI has scheduled further broad-based discussions later this Fall and may be a ripe opportunity for a joint venture.

Faced with an overwhelming volume of Big Data that must be parsed and synthesized into design intelligence for near-future usage, the Council also recognizes that the opportunities and threats presented above must be considered upon a backdrop of a rapidly increasing population along with imminent climate threats.

By 2050 there will be 10 billion people on the planet, of which two-thirds will live in cities ideally comprised of microcosmic communities. Globally, the population will exceed 11.8 billion by 2100, and in the U.S., the southern region is expected to see extreme increases in population. Such growth demands the efficient design of buildings, bridges, roads, and improved access to water and utilities. According to Autodesk, cities with access to Big Data and sophisticated modeling collect a wide array of environmental data to advise when, where and what infrastructure types to invest in. Without that external input, those policy questions are answered intuitively rather than upon objective data. Policymakers can prioritize urban planning based on the big impactors such as heat islands, higher potential crime areas and identifying walkability issues that can be assessed and solutions determined based on data collected. The same access to and usability of Big Data is used to design and create both individual buildings and communities that are safe, efficient and profitably completed.

Meanwhile, Florida continues to grow at an aggressive pace, with growth expected to average 1.5% through 2024. Nearly 900 new residents move to Florida every day, the

equivalent of adding a city the size of Orlando every year. The increased population will challenge resilience planning throughout the state. Left unchecked, this growth will lead to sprawl and an eventual complete collapse of infrastructure systems. Already stressed roadways will be unable to handle the traffic loads, water distribution will be clogged, and energy production needs unmet. In addition, the increase in the population will directly contribute to the ever-increasing climatic changes experienced throughout the state.

With the several million new residents expected over the next decade, informed responsible growth is the only means to preserve the balance between the built and natural environments. Several studies have been proffered that illustrate the result of unchecked horizontal growth patterns (suburban sprawl) versus increasing densities and promoting vertical urban infill. Florida is in a unique position to lead the country by example, with strong growth management policies. The state's sheer number of cities provides a unique challenge to establish growth management policies that support continued growth while maintaining the open landscape the state needs for agriculture, tourism and a sustainable environment.

What is more, hurricane rates are expected to increase both in number and intensity. No one along the coast of the mainland U.S. is exempt from the threat of a land-falling storm, but more hurricanes strike states along the Gulf of Mexico than anywhere else on the continent. Florida has suffered the most. Of the 296 known hurricanes that struck the U.S. between 1851 and 2019, 118 (40%) have hit or sideswiped Florida. That is nearly twice as many hurricanes as the 65 (22%) in Texas, the state with the second-most impacts. Louisiana and North Carolina are third and fourth. Given Florida's unique geographical footprint, stretching North-South over 500 miles, the increased population will make it nearly impossible to safely evacuate the state's southern region in the event of emergencies.

Once again, Florida is in a distinct position to create robust plans to protect the population during weather events. Creating a statewide strategic and substantial "shelter in place" plan will protect the public far better than building more roads. Additionally, creating code that allows certain building types to be used effectively as a shelter will provide safe and secure protection for all groups. Beyond shelters, provisions for fresh water, temporary utilities, food sources and medical treatment should all be part of the resilience plan. Shelters must also be quickly adaptable to various other threats, such as another pandemic where temporary quarantine or field hospitals will be needed on short notice.

STRATEGIC COUNCIL RECOMMENDATIONS

Ultimately, the discussion led the Council to gravitate towards architect-based solutions to climatic, biologic and economic impacts through the design of resilient, dense and smart communities.

The undersigned recommends the following approach for AIA Florida. In its resiliency, advocacy, educational and communications efforts, dedicate resources and human capital to collaboration with different groups including but not limited to the Florida Urban Land Institute, 1000 Friends of Florida, The Trust for Public Land and the Florida Department of Agriculture and Consumer Services, University of Florida Institute of Food and Agricultural Sciences, "big agriculture" and other non-traditional partners to develop urban growth boundaries to contain sprawl and encourage vertical development of mixed-use, multi-cultural and walkable communities. In support of these efforts, consider pursuing a constitutional amendment to establish a minimum 4:1 ratio of undisturbed natural environment to developed inhabited area.

Natividad Soto, FAIA
2020 Strategic Council Facilitator

Stephen Panzarino, AIA
2020 AIA Florida President

Of particular emphasis the Council recommends the following key elements be explored:

ATTAINABLE HOUSING FOR ALL

Understanding the population's composition will not vary significantly as it grows; the need for affordable housing will continue to be a priority in creating prosperous communities. The demand for affordable or attainable housing also begs the question, how can the mix of housing types (social, cost and size) influence a community's success as it grows? Does improving the mixture of various demographic groups add to the overall health of the community?

Various cultures around the world support the idea of a diverse community. For example, Asian and Nordic cultures support the concept of multigenerational housing both within the family unit and the overall community. Traditional Blue Zones around the globe also confirm that a multigenerational community is the most balanced and healthy. For instance, locating senior living facilities adjacent to schools would expose senior residents to youthful students' sounds and activities at recess. This interaction would provide each group a connection to the other. Shared common outdoor space would allow for greater interaction and potential security. In response to the current pandemic, studies in the Netherlands are beginning to emerge, looking at how public spaces can be best used. These studies focus on active versus reflective spaces, young versus elderly, and active versus passive activities. Strong public spaces within a community help create the fabric for interaction and social understanding.

With support for increasing density within urban areas, having mixed-use development will increase the ability to provide affordable housing versus market-rate housing and multigenerational opportunities to blend the community and create a more vibrant and dynamic community setting.

The Strategic Council recommends that AIA Florida take up the banner of achieving affordable/attainable housing to meet the needs of all the citizens of Florida. Energize all AIA Florida Board Committees with available data that serves to advocate, educate and promote communities that are resilient to climatic, sociological, economic and health disruptions.

Ideas discussed include:

- Advocate for legislation that (re-)establishes a knowledge-based statewide growth management system to achieve intentional, intelligent planning/zoning vs. reactive organic development
- Advocate for statewide zoning models that promote the development of planned neighborhoods that serve a diverse society. These models would allow people the choice of staying in their "neighborhood" through life changes, maintain access to available basic services such as childcare, education and stimulate community through closeness to family for multi-age support.
- Advocate for State legislation that directs maximum zoned building height measurements to be relative to science-based BFE/DFE levels.
- Advocate for retrofitting suburbia, stimulating the creation of neighborhood fabric. Transforming areas into vibrant, self-sustaining neighborhoods with various levels of housing affordability and supporting services and distinct identity.
- Advocate for state legislation that sets minimum open space requirements for Cities and neighborhoods to promote equitable access to nature and recreation.
- Advocate for financial incentives that stimulate would vibrant communities like consistent application (and protection of) of the Sadowski Act funding, tax credits, private/public grants, etc.
- Create alliances with related industries (developers, realtors, landowners) to communicate the benefits of our policies
- Educate stakeholders, including the public, developers, architects, public officials, planners, etc., on the benefits of affordable housing.

RESILIENCY

AIA Florida has made tremendous progress in generating increased focus and understanding of the impacts of climate change on our state. Flooding impacts every aspect of our state and economy. Education and support for legislation to combat environmental changes is a cornerstone of AIA Florida's mission, as such:

> The Strategic Council recommends that AIA Florida continue its efforts in achieving climatic resiliency in Florida and expand the definition of resiliency to include biological, economic and social resiliency.

Ideas discussed include:

- Proactively controlling the economic and sociological effects of biological events that affect our work and human interaction through design solutions.
- Advocate for expanded access to pertinent knowledge on how diseases are spread.
- Advocate for public policy to be based on data/studies by establishing coalitions with University systems and FCI as they are ideal sources for presenting new data to policymakers.
- Establish collaboration with product manufacturers and software experts to simplify the use of relevant data in the design process.
- Proactively responding to climate forecasts by preparing the built environment for all segments of society.

PROSPERITY

The Strategic Council recommends that AIA Florida commit to removing barriers to success with a direct emphasis on implementing evidence-based information to achieve prosperity for all Floridians.

Ideas discussed include:

- Grasping sociological data to advocate methods to overcome challenges and stimulate opportunities intelligently.
- Opportunities include:
  - Advocating for architecture technology jobs through certification programs.
  - Taking advantage of the gig economy.
  - Advocating design solutions for remote work with the understanding that the ability to work remotely is not open to all.
  - Advocating for solutions that allow access to jobs within neighborhoods or through responsive transportation.
  - Advocate for design solutions that accommodate multi-generational households and stimulate access to information at all generational levels to strengthen mutual support.
- Health
  - Advocating for legislation to provide funding to proactively identify and remove sources of pollution (mold, lead, asbestos, toxins from industry, noise, etc.)

  - Advocating for access to zoning and pollution information that is simple for the public to access. Requiring landowners and realtors to fully disclose such information.
  - Advocating for minimum neighborhood access to healthy food sources through design (i.e. neighborhood park with community garden, space for farmer's markets)
  - Advocate for access to recreation/nature in all neighborhoods
- Safety
  - Implementation of design solutions that thwart criminal activity. Changing public policy to mainstream the use of such design solutions.

RESILIENCE PLANNING FOR TWENTY-FIRST CENTURY FAMILIES: TRENDS AND STRATEGIES FOR FLORIDA'S UNDESERVED COMMUNITIES

AIA Florida

The COLLEGE *of* SOCIAL SCIENCES and PUBLIC POLICY

Department of Sociology

Resilience Planning for Twenty-first Century Families: Trends and Strategies for Florida's Underserved Communities

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Executive Summary

Poverty is a challenge for many Americans. The roots and consequences of this social problem have been studied and dissected by countless sociologists, economists, and other policy-oriented think tanks and public commentators.

However, despite widespread debate and attention to poverty over various decades, this condition remains one of the most significant problems facing twenty-first- century families in America and the State of Florida.

Given the impact of poverty in addition to entrenched biases ranging from systemic racism and sexism to ableism, many families continue to encounter blocks in their path to resilience. Economic conditions have made it difficult for families with median wages to make ends meet. Adding to this are massive infrastructure and network deficits in underserved areas that have undermined community well-being disproportionately across class and racial lines.

This report provides an overview of various demographic trends and constraints in the State of Florida that influence opportunities to implement and institutionalize social justice initiatives in underserved communities that aim to improve the well-being and adaptability of residents in these spaces. Findings in this report draw from a statistical analysis of public data that captures the social, economic, and ecological realities that impact how citizens work, live, and play in Florida. This report delivers a summary of the latest and most relevant indicators of socioeconomic and health well-being from various sources, including the US Census Bureau, the Centers for Disease Control and Prevention, Florida Department of Children and Families, the US Bureau of Labor Statistics, and the US Environmental Protection Agency.

Three findings emerge from this analysis of the demographic trends and structural conditions faced by most families in Florida. First, trends illustrate that most of Florida's families are poor or near-poor, based on their total family income. As a result of these economic trends, many families do not earn enough each month to cover basic household necessities.

The second take-away from this analysis is that many Florida families have increasingly become multi-generational units consisting of parents, young children, and elderly family members. The final note-worthy demographic trend is that a significant number of Florida families are led

by relative caregivers, who are frequently retired grandparents (living with and without parents) who are solely responsible for their grandchildren's custodial care.

The consequences of these demographic trends are vast, especially considering the quality of public education, essential services, and the availability of capacity-building resources in most underserved communities. For instance, as illustrated in this report, health outcomes at the community level are correlated with poverty. Because of this relationship between poverty and health, populations who are more likely to live near brownfield sites and other toxic exposures tend to earn the least and possess the fewest connections with decision-makers in the broader community.

Residents in underserved communities are also less likely to connect their children with programmatic activities designed to inspire them to embrace non- traditional employment pathways. Accordingly, a significant share of residents in underserved communities lack access to affordable housing, quality social services, and capacity building opportunities like credentialing programs for apprentice level building trades work that might help ensure a path to consistent family-sustaining employment. Previous research has found that disproportionate access to mentorship in underserved communities also emerges, even among people with the same vocational training. Why? People in underserved communities have fewer resources and social ties that promote employability.

Ultimately, it is challenging to design poverty interventions because there are many factors outside the control of individual residents—and even builders, contractors, and architects committed to social justice that shape the conditions of the built environment in low resource, underserved communities. Due to the average family's reliance on low-paying service sector jobs and a social benefits system that limits its minimal support to the poorest Americans, this report illustrates that near-poor families face difficult financial circumstances and live paycheck to paycheck. Additional factors include preexisting inequalities in the built environment (e.g., patterns of residential segregation, disparate zoning practices, long-standing building code violations, etc.), extraordinary events, and climate-related displacement that progressively undermine community well-being.

To break the cycle of poverty, interest groups and organizations have committed to developing community-specific strategies that help empower the capacity of people, family units, networks, and institutions within underserved communities. In recent years, resilience planning has played a pivotal role in helping low-resource cities and towns level the playing field. Resilience planning consists of community-driven plans and capacity-building programs designed to help underserved populations respond to the shocks and pressures they face in modern-day society. This report concludes with a summary of actionable recommendations relevant to Florida's families in underserved communities.

KMD
Tallahassee, FL July 23, 2020

Part 1: Demographic Makeup of Florida

The tables and figures below summarize vital demographic trends that clarify economic conditions, including poverty rates, poverty relief patterns, and the prevalence of multi-generational households (e.g., relative caregivers) in the State of Florida. Table 1 reports poverty rates and other key indicators that describe populations receiving cash assistance from the Temporary Assistance for Needy Families (TANF) program by county. Table 2 compares families by age, income level, and residence (USA vs. Florida).

Table 1: Types of Cash Assistance Groups by Region by Selected Counties, February 2020

County Name	Poverty Rate	Relative Caregiver	SSI Income	Non- citizen	Incapacitated Adult	Teen Parent	Total	% Relative Caregiver
Alachua	20	361	62	4	3	3	527	69
Baker	15	92	5	0	0	2	113	81
Bay	13	200	24	3	1	0	285	70
Broward	13	1090	157	114	21	3	1835	59
Calhoun	21	20	4	0	0	0	26	77
Charlotte	11	255	16	2	3	0	324	79
Citrus	15	369	44	2	2	2	489	75
Clay	9	325	23	0	6	0	414	79
Collier	11	148	5	18	0	0	191	77
Columbia	17	199	26	3	1	1	278	72
Dade	16	971	387	247	61	6	2476	39
DeSoto	26	95	5	11	1	0	129	74
Dixie	25	69	6	0	0	0	87	79
Gulf	20	24	3	0	0	0	30	80
Hamilton	28	27	5	0	0	0	38	71
Hardee	27	89	5	12	0	1	119	75
Hendry	24	128	12	19	2	1	196	65
Hernando	14	450	56	6	1	1	632	71
Highland	21	190	22	7	5	0	269	71
Liberty	24	18	1	0	0	0	21	86
Madison	23	29	5	0	0	1	44	66
Manatee	10	554	47	60	6	2	821	67
Marion	15	734	94	13	8	1	1108	66
Martin	11	51	8	2	0	1	71	72
Taylor	22	60	2	0	0	0	69	87
Union	21	45	6	0	0	0	58	78
Volusia	13	727	80	12	15	4	1167	62
Wakulla	12	43	2	0	0	0	51	84
Walton	11	113	3	0	1	0	135	84
Washington	23	27	3	1	0	0	44	61
State Totals		22,406	3,429	1,149	316	105	35,253	64

Source: Florida Department of Children and Families, Welfare Flash Points Feb 2020

Table 2: Distribution of Income Groups Across Age of Head of Household in Florida and USA, 2018

	USA	Florida
Householder under 25 years:	4	3
Poor (under $25,000 for family of 4)	30	52
Near Poor ($25-50,000 for family of 4)	39	38
Middle Class ($50-100,000 for family of 4)	16	8
Upper Middle Class ($100-150,000 for family of	5	2
Upper Class (over $150,000 for family of 4)	2	1
Householder 25 to 44 years:	32	30
Poor (under $25,000 for family of 4)	11	23
Near Poor ($25-50,000 for family of 4)	29	38
Middle Class ($50-100,000 for family of 4)	25	24
Upper Middle Class ($100-150,000 for family of	17	10
Upper Class (over $150,000 for family of 4)	14	5
Householder 45 to 64 years:	38	39
Poor (under $25,000 for family of 4)	13	23
Near Poor ($25-50,000 for family of 4)	24	34
Middle Class ($50-100,000 for family of 4)	23	23
Upper Middle Class ($100-150,000 for family of	18	12
Upper Class (over $150,000 for family of 4)	19	9
Householder 65 years and over:	26	28
Poor (under $25,000 for family of 4)	21	35
Near Poor ($25-50,000 for family of 4)	34	39
Middle Class ($50-100,000 for family of 4)	19	16
Upper Middle Class ($100-150,000 for family of	10	6
Upper Class (over $150,000 for family of 4)	8	4

Source: American Community Survey, 2018

Tables 3-4 document the occupational status and average wages of Florida residents using the most current data from the US Census and Bureau of Labor Statistics. These tables illustrate that most Floridians work low-wage service sector jobs. On average, wage-dependent Floridians earn $8.56 per hour.

However, it turns out that the average wage does not cover the monthly costs of a single adult or a family of four with young children. Table 5 presents the gap between average salaries and monthly household expenses. Figure 1 documents the distribution of average weekly wages by county across the state.

This illustration shows that low-wages are prevalent across Florida, except for a few counties that neighbor impoverished areas in the state, including Palm Beach, Hillsborough, Duval, and Leon counties.

Table 3: Annual Occupational Employment and Annual Wage Data for Multiple Occupations in Florida, 2019

Occupation	Employment	% Employment	25th %	Mean	75th %
Total, All	2,642,310		$25,001	$50,064	$59,616
Architecture and Engineering	26,900	1	$52,484	$76,800	$96,399
Arts, Design, Entertainment, Sports, and Media	34,330	1	$31,947	$55,348	$67,329
Building and Grounds Cleaning and Maintenance	92,370	3	$21,189	$28,102	$31,648
Business and Financial Operations	154,600	6	$45,177	$71,729	$84,961
Community and Social Services	35,460	1	$33,253	$47,120	$56,827
Computer and Mathematical	57,880	2	$53,615	$82,501	$105,059
Construction and Extraction	105,110	4	$31,758	$43,896	$51,771
Education, Training, and Library	127,030	5	$29,043	$53,603	$66,685
Farming, Fishing, and Forestry	4,480	8	$18,973	$26,349	$26,739
Food Preparation and Serving Related	258,500	10	$19,317	$26,339	$29,496
Healthcare Practitioners and Technical	160,200	6	$44,866	$78,220	$88,120
Healthcare Support	82,430	3	$23,198	$31,846	$37,030
Installation, Maintenance, and Repair	106,960	4	$31,818	$45,748	$56,801
Legal	35,550	1	$52,651	$109,976	$143,692
Life, Physical, and Social Science	13,590	1	$45,134	$70,347	$89,889
Management	154,150	6	$63,356	$114,646	$142,971
Office and Administrative Support	405,380	15	$28,157	$39,347	$47,025
Personal Care and Service	61,900	2	$20,557	$29,598	$32,925
Production	80,420	3	$23,333	$35,732	$42,275
Protective Service	87,700	3	$25,750	$47,386	$63,350
Sales and Related	325,800	12	$21,529	$41,669	$47,986
Transportation and Material Moving	231,580	9	$22,734	$38,499	$41,213

Source: US Bureau of Statistics

Table 4: Hourly Wages in Florida, 2020

Hourly Minimum Wage	$8.56 / hour
Weekly Minimum Wage	$342.40 / 40-hr week
Yearly Minimum Wage	$17,804.80 /year
Median Hourly Wage	$16.06/ hour

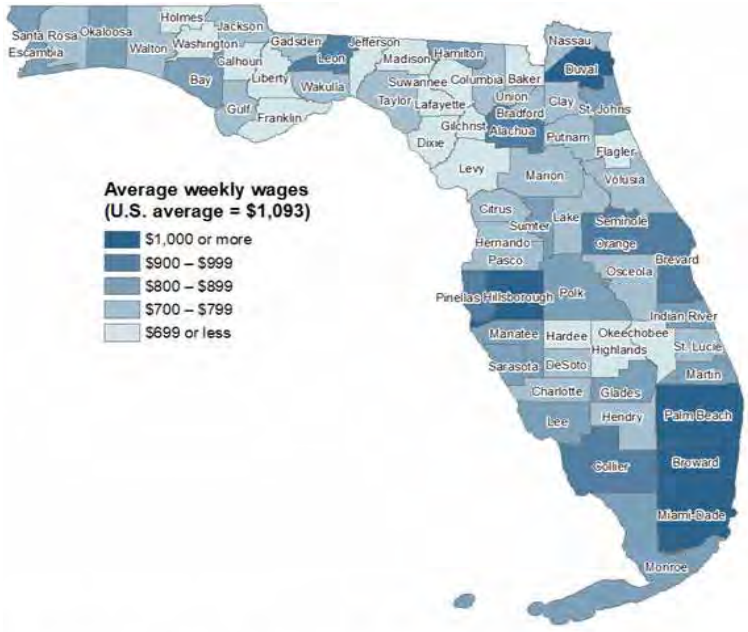
Source: US Bureau of Labor Statistics

Table 5: Monthly Costs, Florida Average, 2015

Monthly Costs	Single Adult	Two Adults, 1 infant, 1 preschooler
Housing	$609	$842
Child care	NA	$1,015
Food	$165	$547
Transportation	$326	$653
Health Care	$164	$628
Miscellaneous	$145	$408
Taxes	$189	$395
Monthly Total	$1,589	$4,488
Annual Total	$19,176	$53,856
Hourly Wage	$9.59	$26.93

Source: U.S. Department of Housing and Urban Development (HUD), 2015; U.S. Department of Agriculture (USDA), 2015; Bureau of Labor Statistics (BLS), 2015; Internal Revenue Service (IRS) and Florida Department of Education, 2015

Figure 1: Average Weekly Wages by County in Florida, 2019 (Third Quarter)



Source: U.S. Bureau of Labor Statistics.

Tables 6-7 disaggregate these findings by illustrating the demographic make-up of Florida's underserved population by race, gender, age, sex, education, and county of residence. While poverty is concentrated among the young, least educated, and minority groups, Table 6 illustrates that poverty is also found among the elderly and most educated.

Compared to national estimates, a larger share of Florida's elderly and it's most educated are among the working poor. Given these economic conditions, it is not surprising to find that households, both at the national level and in the State of Florida, have become multi-generational. As illustrated in Table 7, grandparents in recent years have increasingly taken on custodial responsibility for their grandchildren in these households.

Table 6: Demographic Makeup of Poor Population in the US and Florida

	United States		Florida	
	Below poverty level	% Below poverty level	Below poverty level	% Below poverty level
	41,852,315	13.1%	2,840,977	13.60%
AGE				
Under 18 years	12,997,532	18.0%	819,256	19.7%
Under 5 years	3,758,704	19.5%	240,153	21.5%
5 to 17 years	9,238,828	17.5%	579,103	19.0%
Related children of householder under 18 years	12,688,856	17.7%	799,866	19.3%
18 to 64 years	24,030,690	12.3%	1,567,616	12.6%
18 to 34 years	11,172,384	15.5%	652,793	15.0%
35 to 64 years	12,858,306	10.4%	914,823	11.3%
60 years and over	7,054,887	9.9%	624,736	11.0%
65 years and over	4,824,093	9.4%	454,105	10.6%
SEX				
Male	18,550,942	11.9%	1,268,823	12.5%
Female	23,301,373	14.3%	1,572,154	14.6%
RACE AND HISPANIC OR LATINO ORIGIN				
White alone	25,230,693	10.9%	1,829,740	11.7%
Black or African American alone	8,971,239	22.5%	698,541	21.2%
American Indian and Alaska Native alone	640,066	23.7%	9,952	17.0%
Asian alone	1,957,779	10.8%	73,480	12.5%
Native Hawaiian and Other Pacific Islander alone	101,584	16.7%	2,343	18.6%
Some other race alone	3,211,683	20.1%	141,645	20.3%
Two or more races	1,739,271	15.9%	85,276	14.2%
Hispanic or Latino origin (of any race)	11,025,445	18.8%	933,824	17.0%
White alone, not Hispanic or Latino	18,211,567	9.5%	1,091,364	9.8%
EDUCATIONAL ATTAINMENT				
Population 25 years and over				
Less than high school graduate	6,118,210	24.4%	406,583	23.9%
High school graduate (includes equivalency)	7,881,885	13.5%	597,469	13.9%
Some college, associate's degree	6,039,126	9.5%	433,983	9.7%
Bachelor's degree or higher	3,154,212	4.4%	278,318	6.0%

Source: American Community Survey, 2018

Table 7: Prevalence of Multifamily Households, US and Florida, 2018

	United States	Florida
Total	6,038,193	390,369
Grandparent householder responsible for own grandchildren under 18 years:	2,786,749	177,459
Parent present	1,717,435	112,424
No parent present	1,069,314	65,035
Grandparent householder not responsible for own grandchildren under 18 years	3,251,444	212,910
Percent Grandparents responsible for minors with parent present	46	45
Percent Responsible Grandparents that are lone caregivers	38	37

Source: American Community Survey, 2018

Table 8 illustrates the extent to which poor families in Florida rely on grandparents (or other relatives) to help raise young children by county. This table shows that relative caregivers (caregivers of minor children who are not the biological parents), with few exceptions, constitute the majority within this population receiving cash assistance from the state.

Table 8: Types of Cash Assistance Groups by Region by County, February 2020

County Name	Poverty Rate	Relative Caregiver	SSI Income	Non- citizen	Incapacitated Adult	Teen Parent	Total	% Relative Caregiver
Alachua	20	361	62	4	3	3	527	69
Baker	15	92	5	0	0	2	113	81
Bay	13	200	24	3	1	0	285	70
Bradford	20	62	9	0	0	0	81	77
Brevard	11	877	88	10	7	2	1231	71
Broward	13	1090	157	114	21	3	1835	59
Calhoun	21	20	4	0	0	0	26	77
Charlotte	11	255	16	2	3	0	324	79
Citrus	15	369	44	2	2	2	489	75
Clay	9	325	23	0	6	0	414	79
Collier	11	148	5	18	0	0	191	77
Columbia	17	199	26	3	1	1	278	72
Dade	16	971	387	247	61	6	2476	39
DeSoto	26	95	5	11	1	0	129	74
Dixie	25	69	6	0	0	0	87	79
Duval	15	1132	257	39	13	8	1982	57
Escambia	15	603	115	5	9	5	928	65
Flagler	10	118	5	1	3	1	175	67
Franklin	23	24	3	0	1	0	31	77
Gadsden	24	78	25	4	0	0	157	50
Gilchrist	17	33	3	0	1	0	43	77
Glades	20	11	3	1	0	0	16	69
Gulf	20	24	3	0	0	0	30	80
Hamilton	28	27	5	0	0	0	38	71
Hardee	27	89	5	12	0	1	119	75
Hendry	24	128	12	19	2	1	196	65
Hernando	14	450	56	6	1	1	632	71
Highland	21	190	22	7	5	0	269	71
Hillsborough	15	1860	375	143	14	9	3211	58
Holmes	24	64	5	0	0	0	84	76
Indian River	11	85	19	3	1	0	138	62
Jackson	24	84	18	0	1	1	123	68
Jefferson	18	29	6	0	0	0	38	76
Lafayette	21	4	4	0	0	0	11	36
Lake	12	378	60	5	7	0	569	66
Lee	12	726	80	61	3	3	1074	68
Leon	21	255	89	3	5	1	468	54
Levy	16	96	15	1	0	0	138	70
Liberty	24	18	1	0	0	0	21	86
Madison	23	29	5	0	0	1	44	66
Manatee	10	554	47	60	6	2	821	67
Marion	15	734	94	13	8	1	1108	66
Martin	11	51	8	2	0	1	71	72
Monroe	12	33	3	0	0	0	50	66
Nassau	10	109	6	1	3	1	145	75
Okaloosa	13	257	23	7	1	1	335	77
Okeechobee	22	72	7	6	1	0	98	73
Orange	16	1109	245	82	20	6	2072	54
Osceola	13	230	54	24	11	1	485	47
Palm Beach	12	939	100	67	19	7	1365	69
Pasco	13	883	109	14	13	5	1307	68
Pinellas	12	1481	150	20	15	8	2075	71
Polk	16	1483	221	79	10	7	2204	67
Putnam	19	269	29	0	0	0	364	74
Santa Rosa	10	165	20	1	4	2	243	68
Sarasota	10	370	25	16	4	3	509	73
Seminole	10	327	55	10	7	2	550	59
St. Johns	7	174	12	1	1	1	223	78
St. Lucie	12	266	51	8	4	1	396	67
Sumter	9	119	13	0	0	1	156	76
Suwannee	19	98	9	1	1	0	131	75
Taylor	22	60	2	0	0	0	69	87
Union	21	45	6	0	0	0	58	78
Volusia	13	727	80	12	15	4	1167	62
Wakulla	12	43	2	0	0	0	51	84
Walton	11	113	3	0	1	0	135	84
Washington	23	27	3	1	0	0	44	61
State Totals		22,406	3,429	1,149	316	105	35,253	64

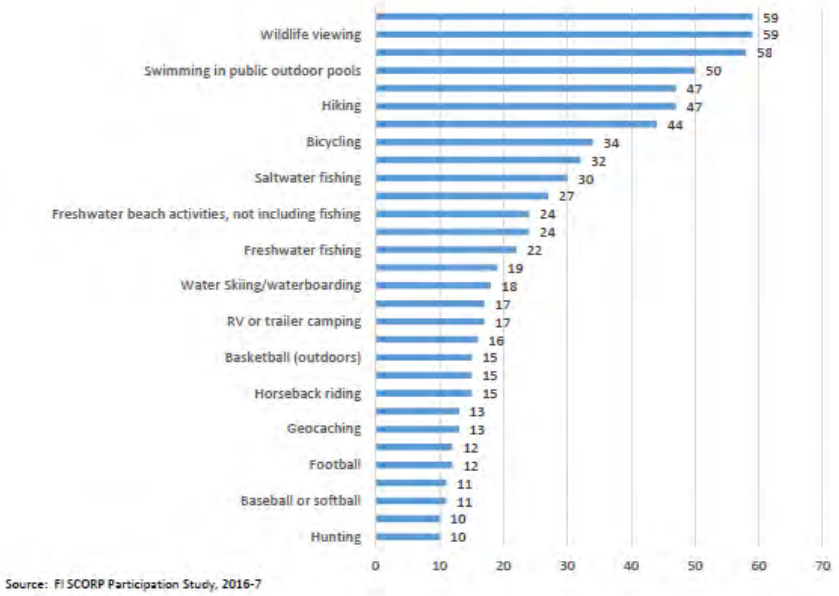
Source: Florida Department of Children and Families, Welfare Flash Points Feb 2020

Part 2: Health Effects of Concentrated Poverty

Florida residents have at their disposal various excellent recreational activities to engage both indoors and outside. Figure 2 illustrates that 59 percent of Florida residents surveyed in a 2016 study enjoy participating in wildlife viewing and swimming in public outdoor pools. Another significant portion of Floridians enjoy hiking, bicycling, and saltwater fishing.

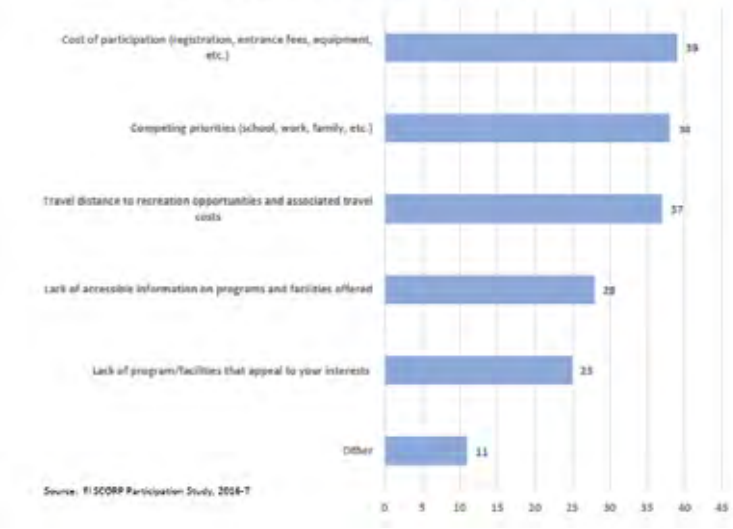
Although there are plenty of activities to engage, many people note various barriers to recreational activities, which are listed in Figure 3. Barriers expressed by survey respondents include the cost of participation, competing priorities, and travel distance issues.

Figure 2: Participation in Recreational Activities in Florida



Source: FI SCORP Participation Study, 2016-7

Figure 3: Barriers to Recreational Activities in Florida



Source: FI SCORP Participation Study, 2016-7

Floridians reportedly have been opting out of recreational opportunities due to competing commitments and the cost of current opportunities. Not only are low- income Floridians more likely to miss out on available recreational opportunities that may help improve their well-being, results illustrate that compared to predominantly affluent areas, residents in low-income communities are more likely to live near toxic exposures and contend with the associated health consequences (affluence proxy in this case average owner-occupied housing value). As evidenced in Table 9, less affluent communities tend to battle with comparably higher rates of lead poisoning and asthma. Table 10, which is limited to the elderly population (adults 65 and older), illustrates that elderly residents in poor Floridian communities, on average, have higher percentages of emergency room visits for asthma among the elderly population than more affluent counties. Rates of preventable hospitalizations for asthma among children, documented in Figure 4, are also concentrated in the state's poorest counties.

Table 9: Selected Charactertistics of Florida Counties, 2018

County	Median Owner-Occupied Housing Unit Value ($)	Lead Poisoning Rate	Asthma Rate
Florida	196800.0	10.1	68.6
Alachua	173900.0	3.8	109.2
Baker	120900.0	7.3	77.9
Bay	172600.0	6.6	48.2
Bradford	97200.0	3.6	72.9
Brevard	177400.0	16.8	48.3
Broward	243100.0	5.8	78.6
Calhoun	81300.0	13.1	50.4
Charlotte	176500.0	8.0	38.4
Citrus	123800.0	10.3	27.3
Clay	174400.0	8.0	57.5
Collier	340100.0	6.8	33.1
Columbia	117800.0	10.1	90.7
Miami-Dade	268200.0	12.8	63.3
DeSoto	84400.0	13.9	27.1
Dixie	74500.0	29.8	59.0
Duval	166900.0	18.8	94.6
Escambia	133600.0	8.2	69.6
Flagler	200000.0	0.9	46.2
Franklin	139500.0	8.1	
Gadsden	99000.0	10.4	72.5
Gilchrist	97800.0	0.0	28.4
Glades	76400.0	0.0	
Gulf	150300.0	18.5	59.7
Hamilton	71100.0	20.4	65.5
Hardee	81800.0	10.9	36.2
Hendry	82000.0	7.6	81.8
Hernando	130300.0	5.9	71.2
Highlands	93800.0	44.5	70.8
Hillsborough	198000.0	22.8	77.8
Holmes	93200.0	9.8	
Indian River	185800.0	6.6	34.2
Jackson	98800.0	3.9	34.1
Jefferson	117900.0	0.0	56.2
Lafayette	105900.0	12.0	
Lake	167200.0	3.8	57.5
Lee	207700.0	3.3	66.3
Leon	195000.0	3.1	62.7
Levy	99400.0	7.2	89.2
Liberty	66600.0	22.8	
Madison	87400.0	0.0	63.0
Manatee	218900.0	6.0	41.8
Marion	127100.0	3.1	62.1
Martin	255000.0	6.4	59.2
Monroe	468200.0	41.8	41.1
Nassau	218100.0	1.2	48.3
Okaloosa	207600.0	3.0	44.4
Okeechobee	89800.0	9.6	72.9
Orange	216000.0	6.4	92.5
Osceola	179800.0	3.9	137.8
Palm Beach	264400.0	9.6	85.5
Pasco	149000.0	11.6	60.8
Pinellas	183000.0	14.0	57.5
Polk	135400.0	17.6	96.5
Putnam	84500.0	8.2	62.1
St. Johns	287700.0	2.9	36.9
St. Lucie	165700.0	6.6	78.2
Santa Rosa	184400.0	3.4	37.0
Sarasota	234800.0	6.3	28.6
Seminole	224000.0	3.2	52.2
Sumter	246500.0	11.1	41.9
Suwannee	95200.0	11.1	47.2
Taylor	82900.0	13.5	54.1
Union	104400.0	6.3	57.3
Volusia	164200.0	3.2	67.4
Wakulla	144700.0	9.3	37.9
Walton	222700.0	4.4	30.9
Washington	109800.0	4.0	32.1

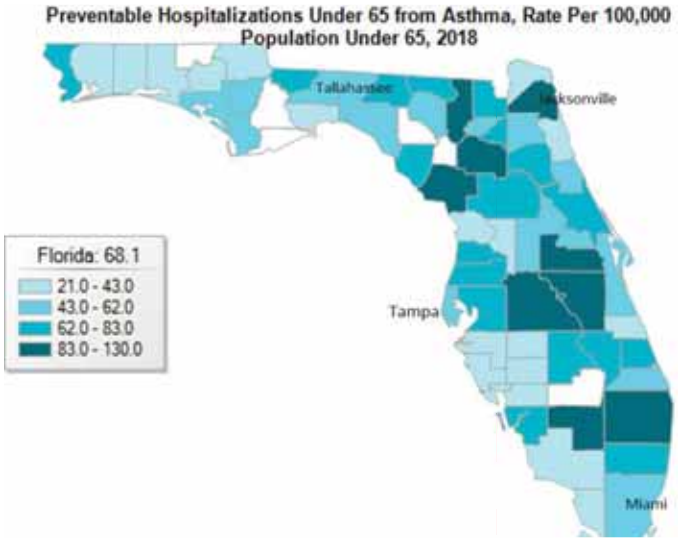
Source: Florida's Bureaus of Community Health Assessment and Vital Statistics, 2018

Table 10: ER visits from Asthma among adults 65 or over, Rate Per 100,000 Population 65 and Over, 2018

County	ER Visit Rate
Florida	115.8
Alachua	142.2
Baker	78.8
Bay	143.6
Bradford	159.0
Brevard	77.2
Broward	169.5
Calhoun	0.0
Charlotte	60.7
Citrus	63.3
Clay	212.1
Collier	57.1
Columbia	101.3
Miami-Dade	163.4
DeSoto	115.0
Dixie	0.0
Duval	199.3
Escambia	97.6
Flagler	89.0
Franklin	248.1
Gadsden	290.3
Gilchrist	27.9
Glades	28.0
Gulf	237.7
Hamilton	115.6
Hardee	203.9
Hendry	189.7
Hernando	45.0
Highlands	111.3
Hillsborough	140.7
Holmes	49.8
Indian River	122.4
Jackson	155.1
Jefferson	59.6
Lafayette	0.0
Lake	109.0
Lee	42.6
Leon	138.8
Levy	78.8
Liberty	157.6
Madison	103.1
Manatee	72.4
Marion	148.4
Martin	57.0
Monroe	78.3
Nassau	117.0
Okaloosa	179.8
Okeechobee	152.5
Orange	201.2
Osceola	238.0
Palm Beach	94.1
Pasco	81.3
Pinellas	66.3
Polk	137.0
Putnam	139.0
St. Johns	48.1
St. Lucie	130.6
Santa Rosa	61.9
Sarasota	45.3
Seminole	135.5
Sumter	37.7
Suwannee	95.2
Taylor	182.2
Union	0.0
Volusia	118.4
Wakulla	61.4
Walton	111.5
Washington	112.8

Source: Florida's Bureaus of Community Health Assessment and Vital Statistics, 2018

Figure 5



Part 3: Resilience Planning in Florida's Underserved Communities

Drawing from the work of Ecologist C. S. Holling (1973), resilience is defined as an ability to absorb shock or adjust to extreme climate events (e.g., acommunity's capacity to bounce back after a flood). Design organizations that intervene on how underserved communities withstand social and economic stressors in their built environment tend to work to enhance their adaptive capacity by helping them adjust to resource deficits and socioeconomic constraints that undermine its collective well-being. Poverty interventions designed to encourage resilience implemented by architects and building trades professionals in particular, often involve a host of initiatives ranging from skill-building efforts that encourage youth to get involved in this field to plans designed to address community-driven crime prevention and help communities deal with the trauma of long-term disinvestment and resource deprivation.

Community-engaged design draws on local knowledge and needs. Small scale design interventions that focus on network capacity have shown to be effective in helping communities rebuild or establish themselves under significant stress. Such effort often manifests as university service-learning programs charged with educating and training the next generation of planners and building trades professionals.

Long-term goals for resilience planning include making efforts to diversify the occupation by developing programs for the youth and expanding and institutionalizing certification programs for individuals in underserved communities who are less likely to secure the opportunity to perform design or building trades work after obtaining the necessary training. To encourage equitable and sustainable social change in underserved communities, design organizations have also worked to help resource-starved areas leverage resources and build relationships with other stakeholders committed to improving the adaptive capacity and socioeconomic well-being of residents.

Recommendations include finding ways to do the following:

Connect the organization's technical and practice knowledge to social and economic goals—expressed by community stakeholders.

Value the contribution of all members of the design team, not just by creating avenues for citizens to retain the majority of decision-making power but also by paying them as experts with local knowledge—and recognizing their value to the design team (see innovative examples of ways to encourage inclusiveness in the design and rehabilitation process generated by David Perkes' Gulf Coast Community Design Studio)

Defer to local wisdom on issues concerning long-standing social problems such as policing, job discrimination, and hurdles to affordable housing (e.g., many design firms opt to build low-income or special needs housing with significant feedback/direction/assistance from community residents like Michael Pyatok in Oakland, California)

Intervene on the information gap. Support citizen science (e.g., community groups attempting to learn about building code norms, permitting processes, etc.) to help residents get involved and educated about the policies and rules that govern where they live

Work to build local coalitions between vulnerable communities and social service organizations, schools, city leaders, and arts organizations (e.g., develop partnerships with universities engaging in service-learning; see Jackie Brookner's work in Portland, Oregon with the "WeDesign" event and the "Train the Trainer" program)

Revisit commitment to investment in the community's future by training and supporting youth interested in the field (e.g., see certification programs like EcoDistricts in Portland, Oregon; for programs targeting youth, see TechBridge in Oakland, California designed to help motivate girls, and underrepresented groups get excited about STEM education and job opportunities)

DESIGN INNOVATIONS FOR RESILIENCY AND REGENERATION

AIA Florida

Design Innovations for Resiliency and Regeneration

AIA Florida, June 19, 2020

Vivian Loftness, FAIA & LEEDFellow
University Professor and Paul Mellon Chair in Architecture
Carnegie Mellon University

Priorities for Architects?

1. **Climate Change & Resiliency**
2. **Covid**
3. **Economic Crisis & Job Loss**
4. **Black Lives Matter**

Design Solutions?
All Design Actions for

Covid
Economic Crisis & Job Loss
Black Lives Matter

Must also address

Climate Change,
Resiliency and Regeneration

The Paris Climate Agreement was adopted by 184 countries in 2015

U.S. Commitments to the Paris Climate Agreement emerged when the US President opted out 2017

82% of the S&P 500 Companies Published Corporate Sustainability Reports since 2016

CSRHUB® Dashboard Competitor Benchmark

Ratings

0 - 29 Low | 30-39 | 40-49 | 50-59 | 60-79 | 80-100 High

Subcategory Ratings		Community			Employees			
Company Name	Community	Community Dev & Philanthropy	Product	Human Rights & Supply Chain	Employees	Compensation & Benefits	Diversity & Labor Rights	Training, Health & Safety
Apple Inc.	49	43	66	43	55	62	50	52
Google, Inc.	59	66	61	49	65	75	68	53
Amazon.com, Inc.	39	38	51	29	46	49	46	43
Wal-Mart Stores, Inc.	42	38	53	40	47	53	41	48
Alibaba Com Limited	43	57	35	40	50	53	51	45
Nokia Corporation	62	56	71	59	61	59	59	64

The 2030 Agenda for Sustainable Development,
was adopted by all United Nations Member States in 2015

shaping the world in which AIA professionals & students live and work.

The Realm of Sustainability in the Built Environment

Sustainable
Green
Regenerative
Ecological
Resilient

Site
Net zero land
Ecological footprint
Urban growth boundaries
Cool communities
Transit oriented development

LEED™
Living Building Challenge™

Energy
Net zero energy
Passive House
Embodied energy
Renewable energy
GHG and Atmospheric Pollutants

AIA Top Ten™

Water
Net Zero Water
Grey water
Black water
Storm water

2030™

Ecodistricts™

IEQ
Thermal quality
Visual quality
Acoustic quality
Air quality

DfD™ Design for Disassembly

Biomimicry

Materials
Renewability
Longevity
Red list
Declare
EPD/HPD

Cradle to Cradle™/ Upcycle™

Biophilia

UNEP Sustainable Dev. Goals™

Human Health

Social Equity
Tiny House, Pocket House
Equitable Infrastructures
QOL Technologies, CSR reporting
Smart Homes, Offices, Classrooms, Cities

Permaculture
WELL™
Fitwel™
Active Design Guidelines™

Resilience

Chronic Stresses

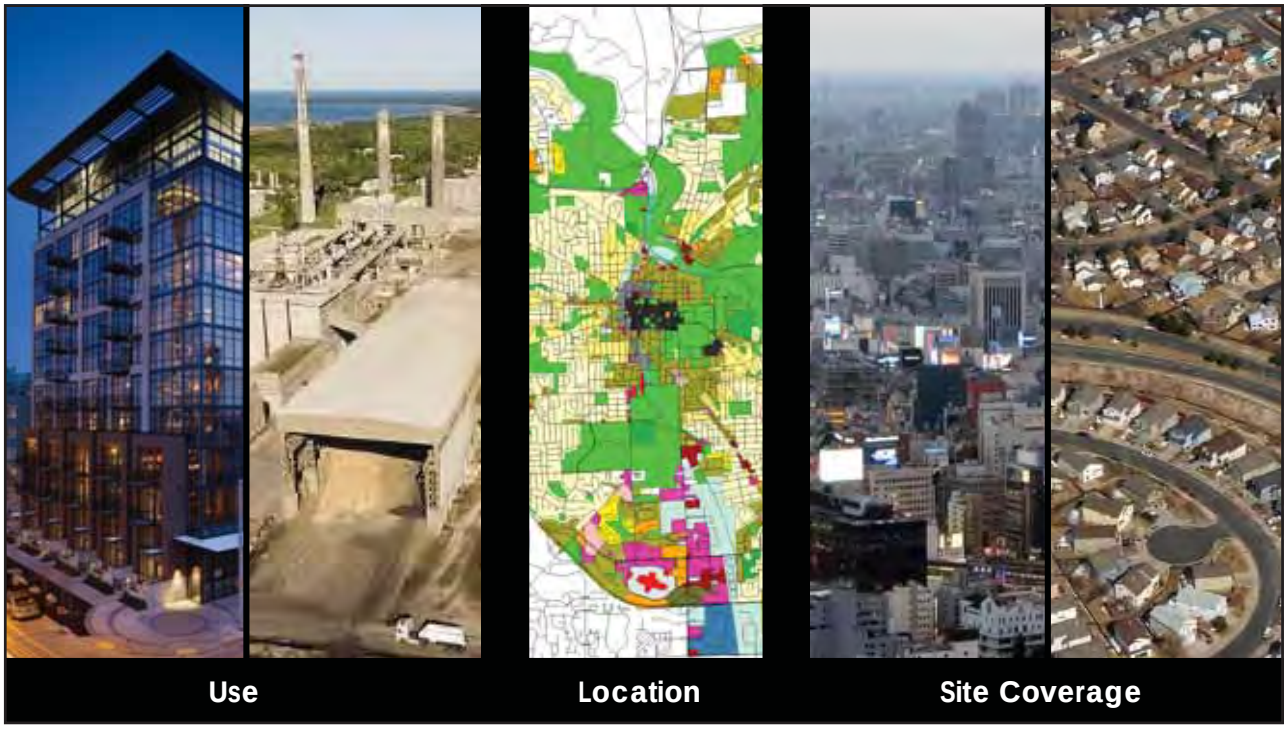
Weaken the fabric of a city on a day-to-day or cyclical basis

Acute Shocks

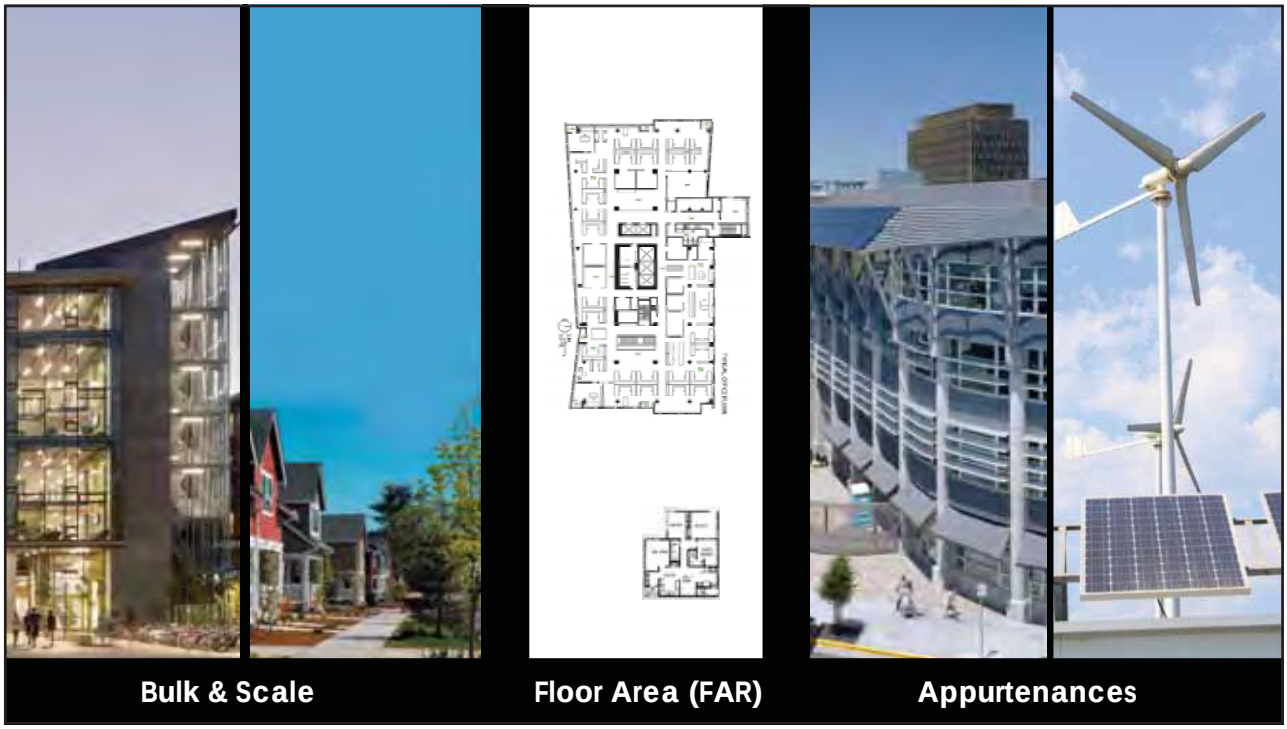
Sudden, sharp events that threaten a city

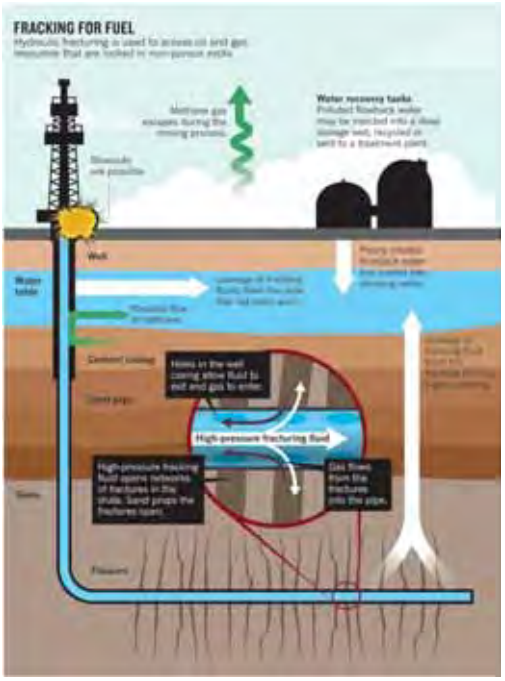
400 Greenbuild attendees over two years, led by:

Bert Gregory, Mithun
Vivian Loftness, CMU
Alisdair McGregor, Ove Arup



Use **Location** **Site Coverage**





63 million Americans are exposed to unsafe drinking water

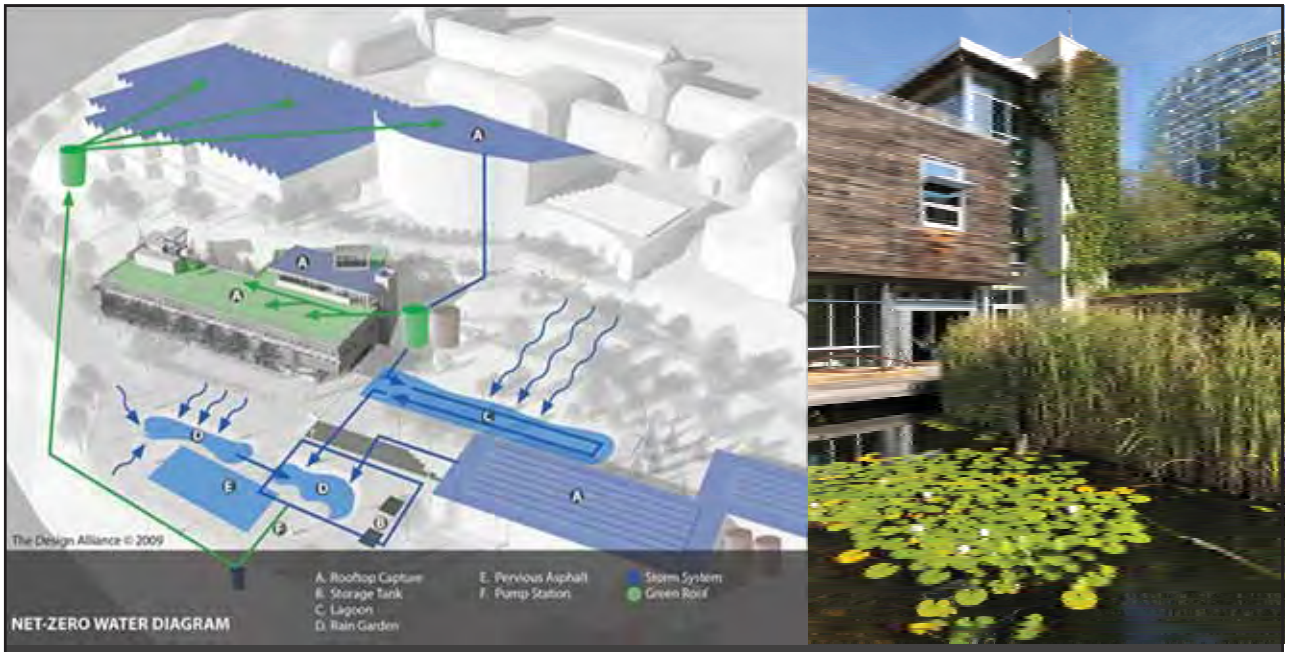
Contamination

vs Separation of Potable vs Non Potable Uses, Design for Access & Maintenance

WATER RESILIENCE

Deluge	Drought	Contamination
Watershed Planning, Absorbing, Flood design	Zero water & district Capture/Store/Greywater	Potable vs Non Potable uses Access & Maintenance

1. Watershed design for every project
2. No development in 2050 100-Year flood plain
3. Reversing impervious surfaces
4. District storm storage as recreational amenities
5. Accessible water and sewer infrastructures
6. Xeriscaping with indigenous plants that support bio diversity.
7. Pervasive Grey water for irrigation, toilets, fire suppression, cooling towers.
8. Bio-remediation of contaminated sites.



Phipps Conservatory Center for Sustainable Landscapes Design Alliance, CJL Engineering, Andropogan,

ENERGY RESILIENCE

Energy Affordability, Equity, & Waste	Energy Insecurity	Peak Energy & Declining Capacity
vs. deep conservation	vs passive survivability	vs. district thermal, CHP & renewables

1. energy and peak energy thresholds for Net Zero Carbon neighborhoods.
2. density for passive, low energy use buildings and local renewables
3. mixed use with district energies
4. distributed energy, community solar, and “island” micro grids
5. resilient safe harbors at neighborhood level
6. energy infrastructure to survive shock
7. building massing for daylighting, passive heating, cooling

.

FOOD RESILIENCE

Diet & Food Insecurity	Food Toxicity	Food Waste
vs. food hubs, community gardens & fishing	vs. local food, protecting agricultural lands	vs. neighborhood composting, food sharing

1. Urban growth boundaries to preserve agricultural land.
2. Regional Transfer of Development Rights for agricultural & forest land
3. Onsite fresh food production and sales facilities.
4. No pollutants that will compromise urban farming
5. Food distribution network for climate shocks
6. Zoning for community agriculture, urban orchards, composting, small animal husbandry
7. Food waste collection for composting, anaerobic digestion, or energy use.
8. Walk radius to farmers markets and fresh food retail

Chatham Eden Hall Campus – Closed Loop Food, Water, Waste **Mithun, BNIM,**


1322 Superfund sites remain on US National Priorities List, with 53 pending and only 375 sites cleaned up and removed by 2014.
Waste Toxicity
vs Design for Disassembly, Minimized toxic sources


860 communities in the US have combined storm sewer systems, serving 40 million people.
Poor Sanitation
vs Storm Capture, Compost, Grey & Blackwater Systems

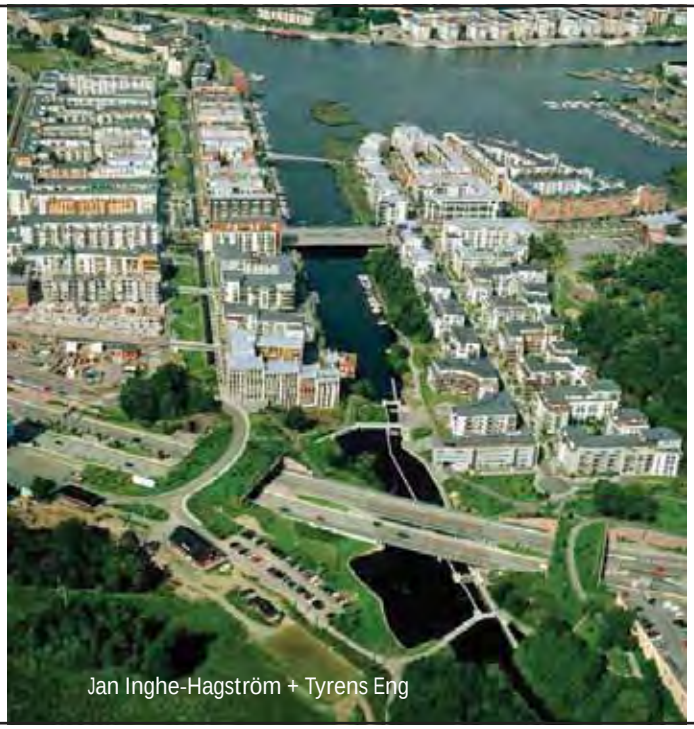
WASTE RESILIENCE

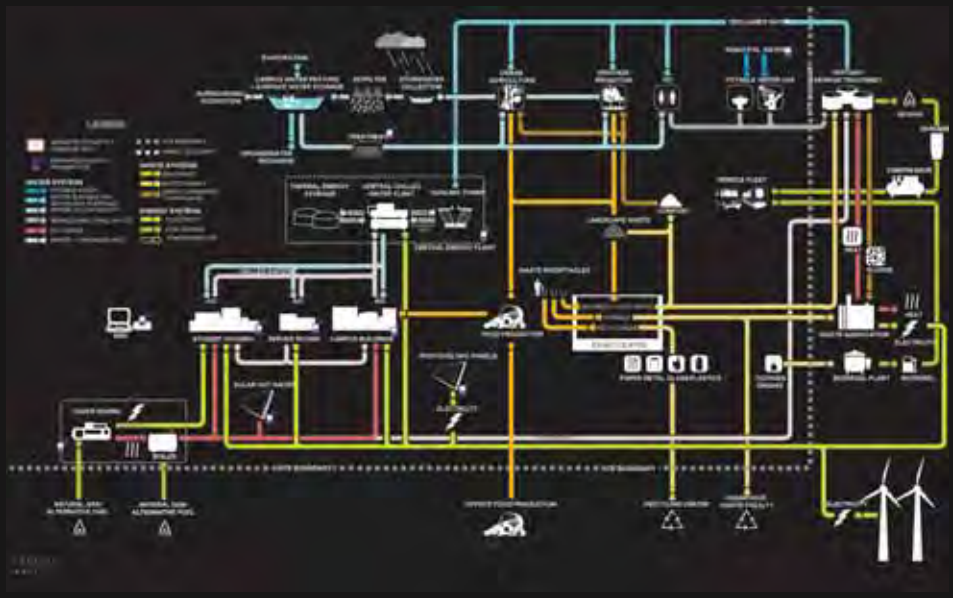
Waste Toxicity	Poor Sanitation	Lost Resources
DfD, minimized toxic sources	CSSO, Neighborhood Black water	Conservation, recycling, trash to energy

1. Require separation of recyclables, waste, and compost at the building level.
2. Require city zoning to locate neighborhood composting facilities and e-cycling if no curbside collection.
3. Require city wide zoning to allow district locations for waste to energy facilities.
4. Incentivize long life buildings and materials.
5. Incentivize flexible and convertible building designs.
6. Incentivize design and construction for disassembly & reuse
7. Incentivize low carbon, healthy, recycled, and recyclable building material use.
8. Require city wide zero waste target analysis and zone for synergistic eco-industrial uses.
9. Require industrial, agricultural, and brownfields to prevent toxic releases in shock events.
10. Require low carbon techniques and zero waste during construction.
11. Incentivize network of district or neighborhood blackwater systems.

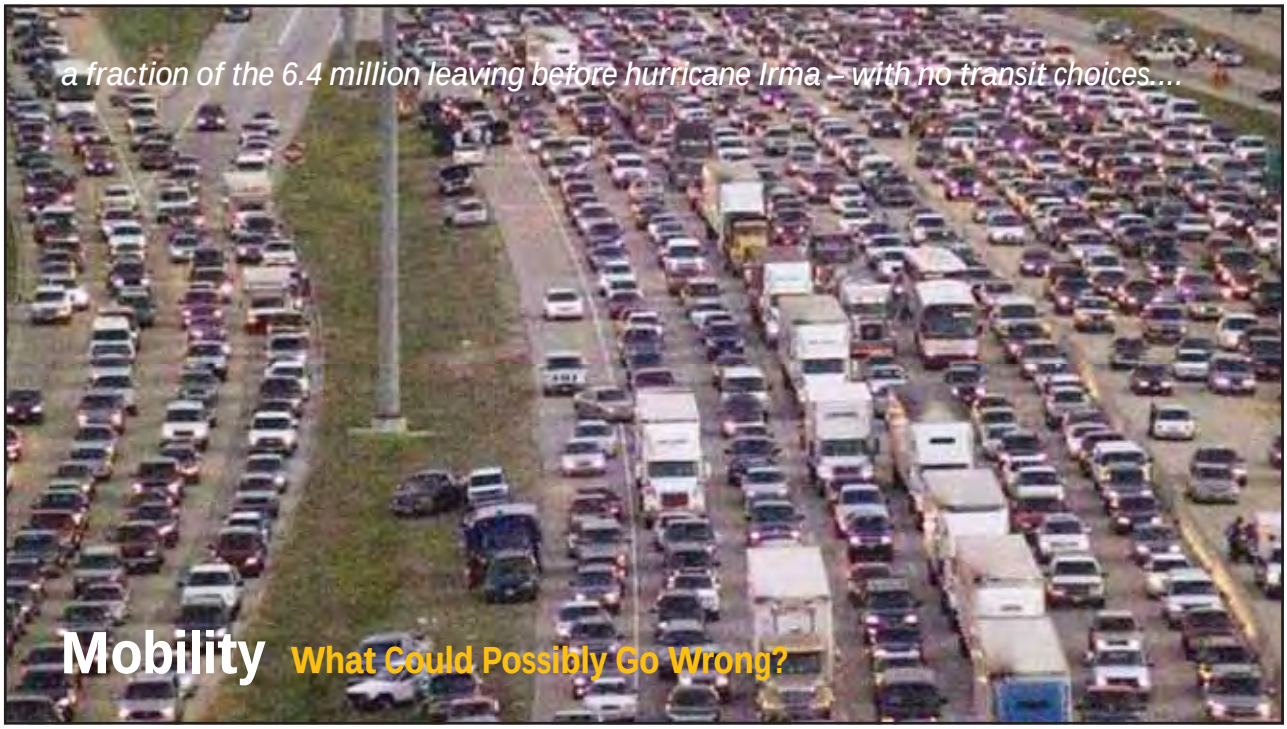
Hammarby
Stockholm Sweden

A community realized by becoming the waste to power authority.



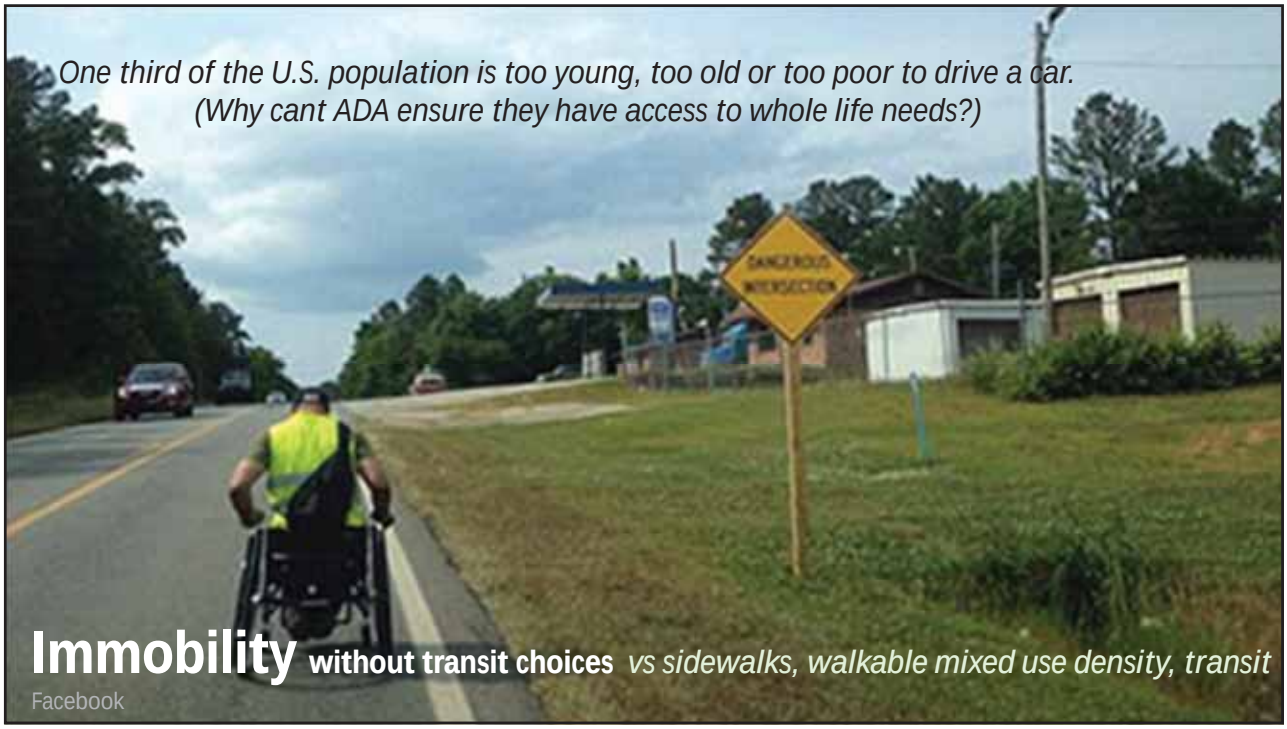


Blair McCary & Peter Busby on Integrated Infrastructures at Hammarby


a fraction of the 6.4 million leaving before hurricane Irma – with no transit choices....
Mobility
What Could Possibly Go Wrong?


www.cyclingpromotion.com.au
Employees with a 45 minute commute spend 16 days a year in traffic,
predominantly solo, with both social and environmental impacts.
Congestion/Grid Lock
vs density, TOD, & mixed mode transportation

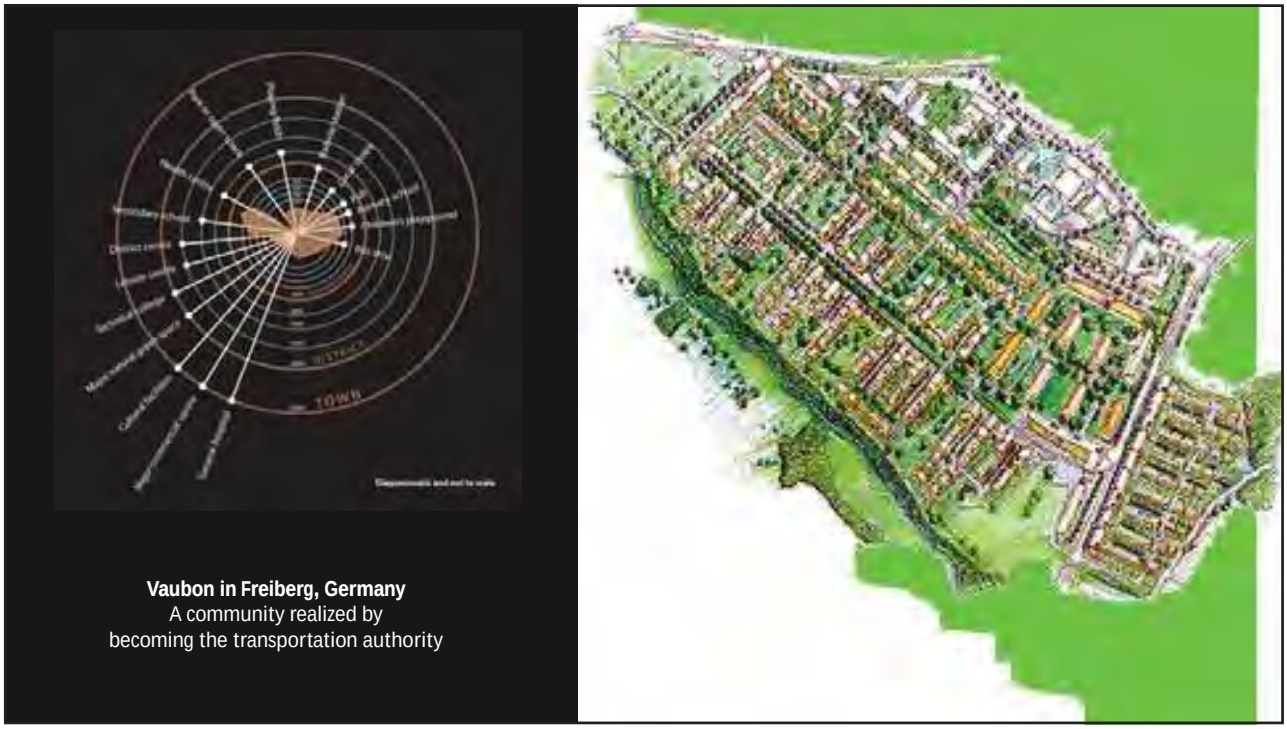

The average US child spends 5-7 hours a day on TV and computer screens.
Inactive lifestyles vs walkability, active design, public space usability


One third of the U.S. population is too young, too old or too poor to drive a car.
(Why cant ADA ensure they have access to whole life needs?)
Immobility without transit choices vs sidewalks, walkable mixed use density, transit
Facebook

MOBILITY RESILIENCE

Congestion / Gridlock	Inactive Lifestyles	Immobility
or density with TOD	or walkability, active design, public space usability	or transit choices, mixed use, reduced parking

1. **Compact, Mixed Use Communities - New and Infill.**
2. **FAR minimums**
3. **Urban Growth Boundaries, ensuring district agriculture and forests.**
4. **Connected greenspaces, bikeways and walks across developments.**
5. **Non-car accessibility to each project, TOD with mixed modes of transport.**
6. **Connected streets, connected greenspaces, traffic calming, and sidewalks for walkability.**
7. **Walking and biking amenities (benches, water refill stations, parklets, lighting, shade trees, showers & lockers, bike storage).**
8. **Transportation Demand Management plan and innovation in mass transit choices**
9. **Parking maximums.**



Vaubon in Freiberg, Germany
A community realized by
becoming the transportation authority

the highest bio-diversity in Germany

Heat causes more deaths than any other natural disaster. Extreme heat events resulted in over 20,000 deaths in Europe (2003) and 55,000 deaths in Russia (2010).

Health given Indoor Air & Heat *vs shade, natural ventilation*


Diseases caused by pollution were responsible for an estimated 9 million premature deaths in 2015 – 16% of all deaths worldwide – three times more than AIDS, TB and Malaria combined. The Lancet Global Burden of Disease Report
Health & Pollution *vs source control, wind zoning, green lungs*
Prolonged exposure to fine particulate matter can cause increased respiratory disease, decreased lung function, chronic bronchitis, and premature death due to respiratory problems.


Since 2010, 82 rural hospitals have closed nationwide and 700 more are at risk of closing within the next 10 years.
HOSPITAL
Physical Access to Care *vs. safe harbors, land use mix, age in place*

HUMAN HEALTH & SAFETY RESILIENCE

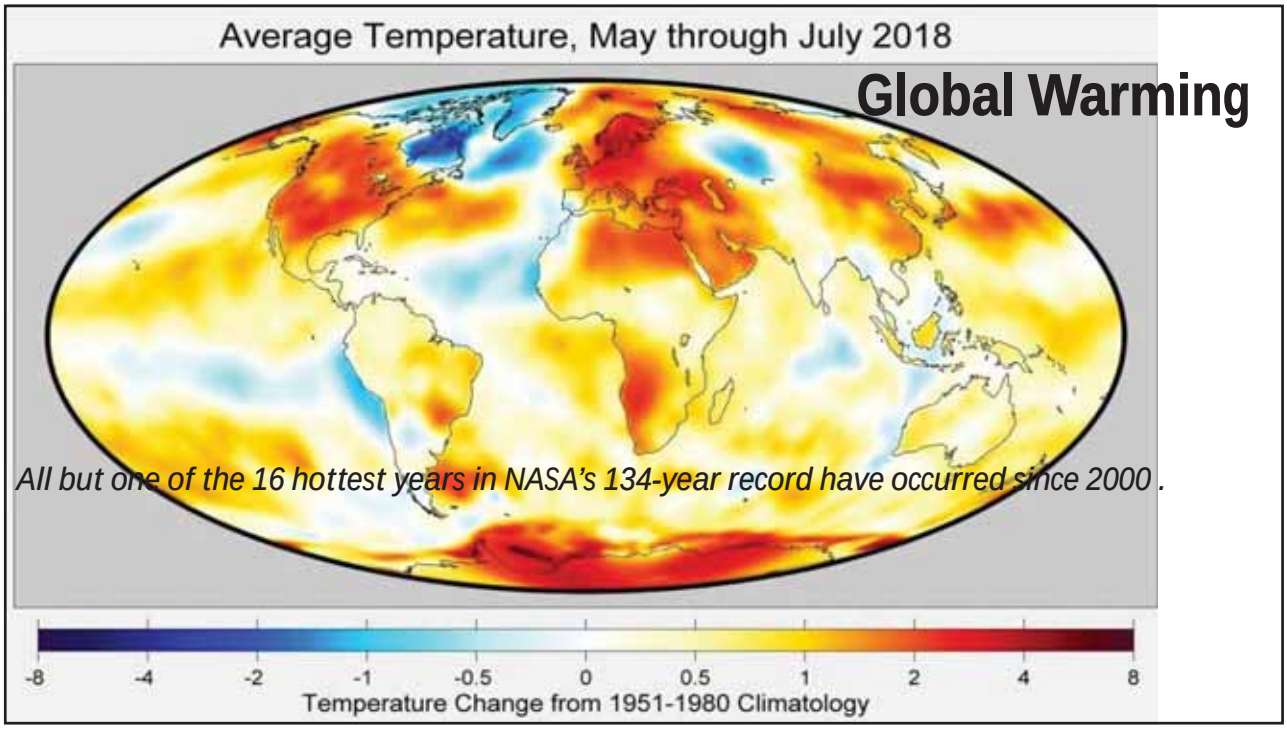
Natural Disasters & Aging Infrastructure
vs 100 year zoning
no new land = no new infrastructure

Indoor Air & Heat
vs passive survivability

Physical Access to Healthcare
vs land use mix minimums & aging in place

Immobility
or transit choices, mixed use, reduced parking

1. Building massing to ensure ambient airflow
2. Maximum 15 min walk to a public park/green space.
3. Require cool surfaces and tree canopy for streets and hardscapes.
4. Green infrastructure to interconnect wildlife, active mobility, airflow, drainage.
5. Schools and community buildings as resilient shelters during natural disasters.
6. Decentralized healthcare access.
7. Spaces for inter-generational social interaction and safety.
8. infill and redevelopment before greenfields.



Global Warming

All but one of the 16 hottest years in NASA's 134-year record have occurred since 2000 .

Resource depletion *vs material & soil conservation, local sourcing*

We are consuming mineral, oil, forest and water resources faster than they can be replenished.

ECOLOGICAL HEALTH RESILIENCE

Global Warming	Resource Depletion	Biodiversity & Bees
vs carbon goals	vs material & soil conservation, local sourcing	vs species & biodiversity goals

1. City wide pre-development systems analysis with ecological heath targets to 2100.
2. Maximum carbon budget per sf for each use.
3. Minimum densities with compact, walkable, mixed use.
4. Elimination of invasive species planting.
5. Citywide habitat corridor plan that promote biodiversity.
6. Ecosystem preservation & restoration through density & height bonuses.
7. Elimination of pesticide, herbicide, chemical nutrient, and toxins
8. Light pollution plan with zero off site and night sky.
9. Soil restoration
10. Green Area Factor for all new development and major renovation.

BIG DATA IN AEC

AIA Florida

Big Data in AEC

Shannon Schmehl
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Ali Atabey
Senior Technical Specialist – AEC
linkedin.com/in/ali-c-atabey/

AUTODESK.

AGENDA

- AEC Challenges
- Case Studies
- What is at stake
- Future of Work
- Call to Action

WELCOME

Shannon Schmehl
Senior Technical Specialist – AEC

Metro Detroit, MI

Arch Background:
- Project Management
- BIM Management
- Adjunct Professor

Hobbies:
- Photography
- Travel
- Reading

Ali Atabey
Senior Technical Specialist – AEC

Boston, MA

Arch Background:
- Designer
- BIM Manager and Tech Evangelist
- Instructor for digital fabrication and computational design

Hobbies:
- Drone pilot
- Sailor

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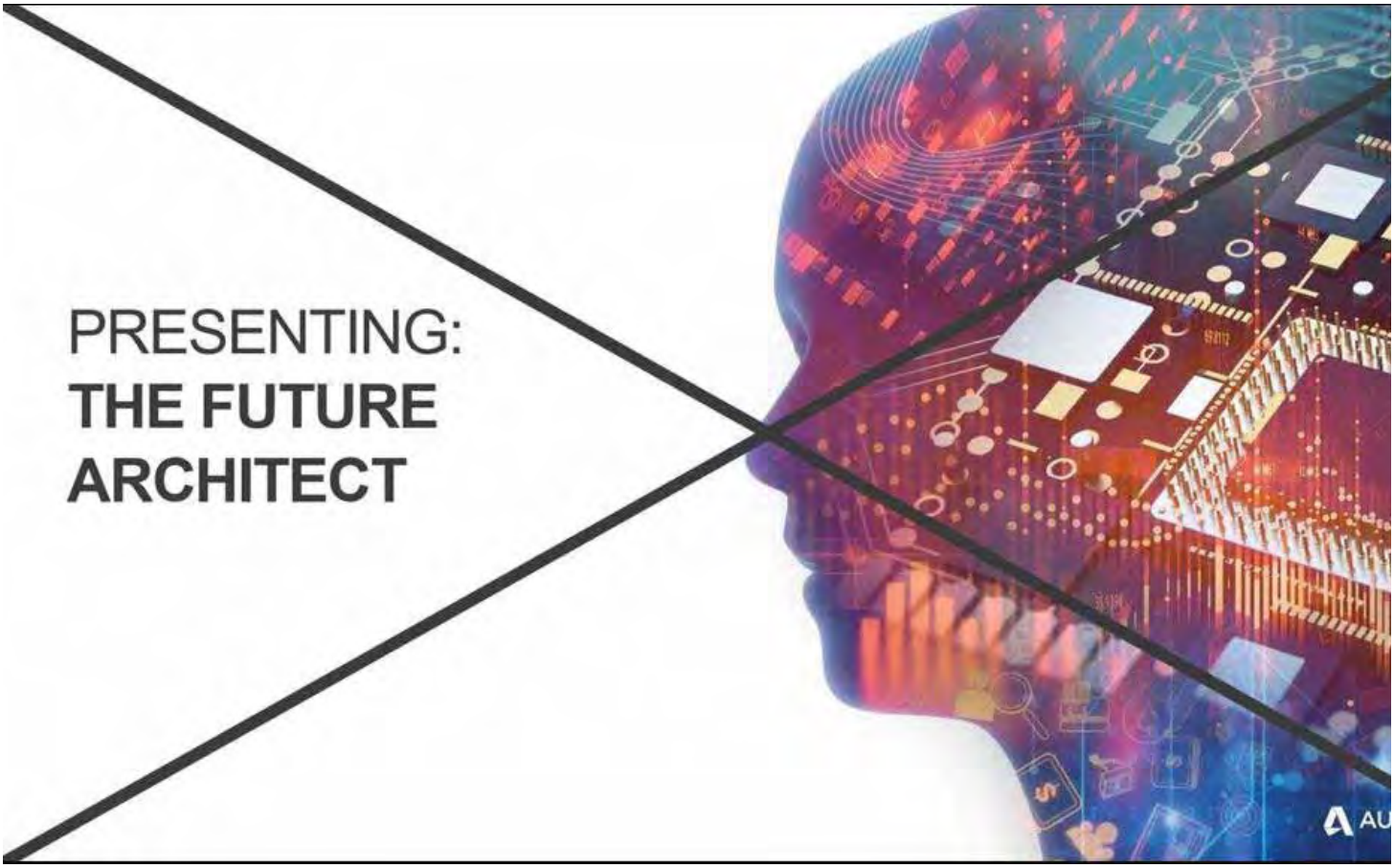
CAD
BIM
Connected BIM
(BIM + the power of the cloud)
Future of


PRESENTING:
THE FUTURE
ARCHITECT

By bringing together data and technology, we can transform the AEC industry into a more insightful, connected, and responsive industry.

More iteration and design possibilities

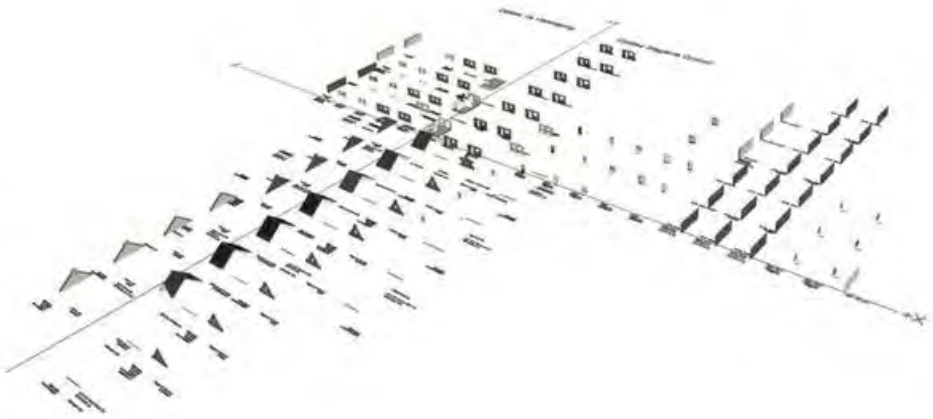
Elimination of tedious and time-consuming aspects of a project

Saves time and reduces costs

Data-driven decision making

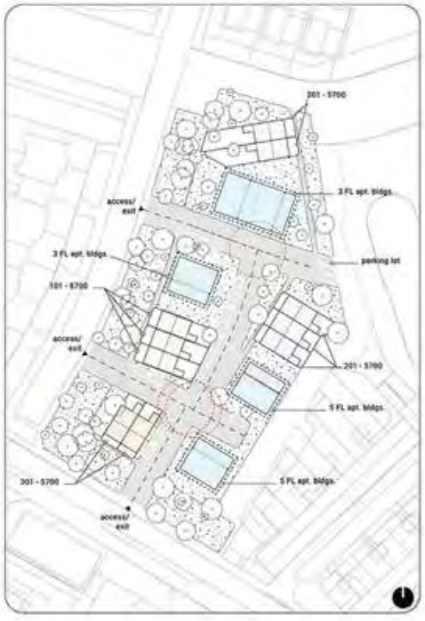
Reduction in waste

Earlier decision-making with the client



AKE


301 - 5700
3 FL apt. bldgs.
access/ exit
parking lot
101 - 5700
access/ exit
5 FL apt. bldgs
201 - 5700
301 - 5700
5 FL apt. bldgs
access/ exit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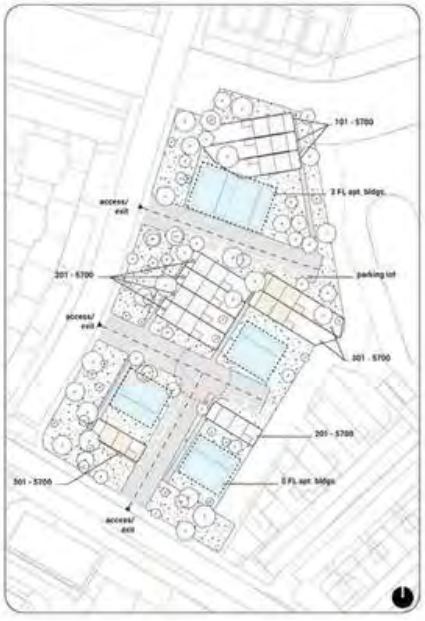
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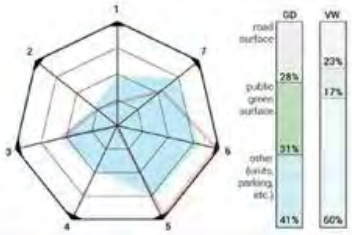
1
2
3
4
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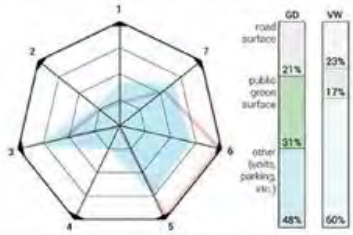
6
7
GD
VW
road surface
public green surface
other (units, parking, etc.)
28%
31%
41%
23%
17%
60%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2
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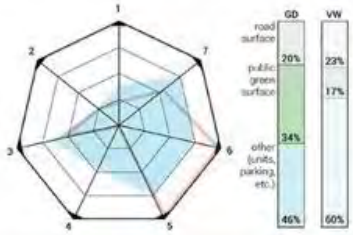
7
GD
VW
road surface
public green surface
other (units, parking, etc.)
21%
31%
48%
23%
17%
60%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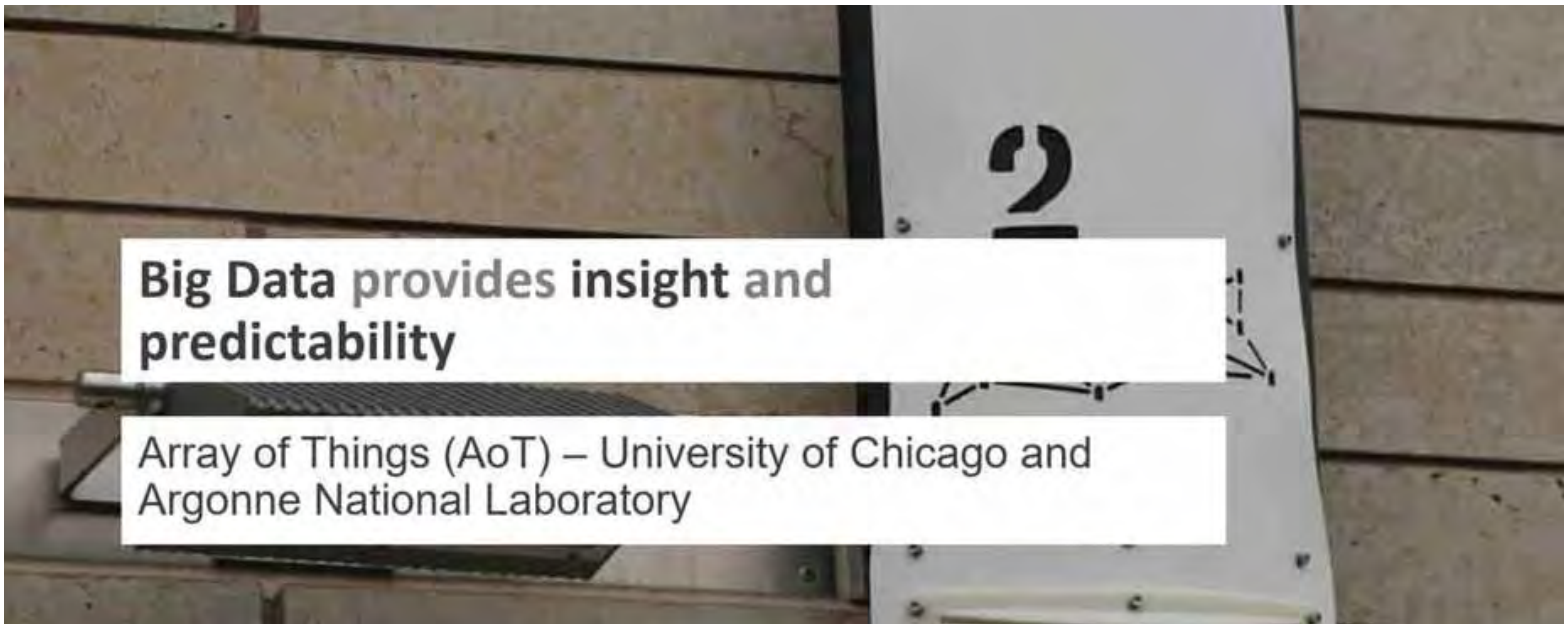
GD
VW
road surface
public green surface
other (units, parking, etc.)
20%
34%
46%
23%
17%
60%

MAKE

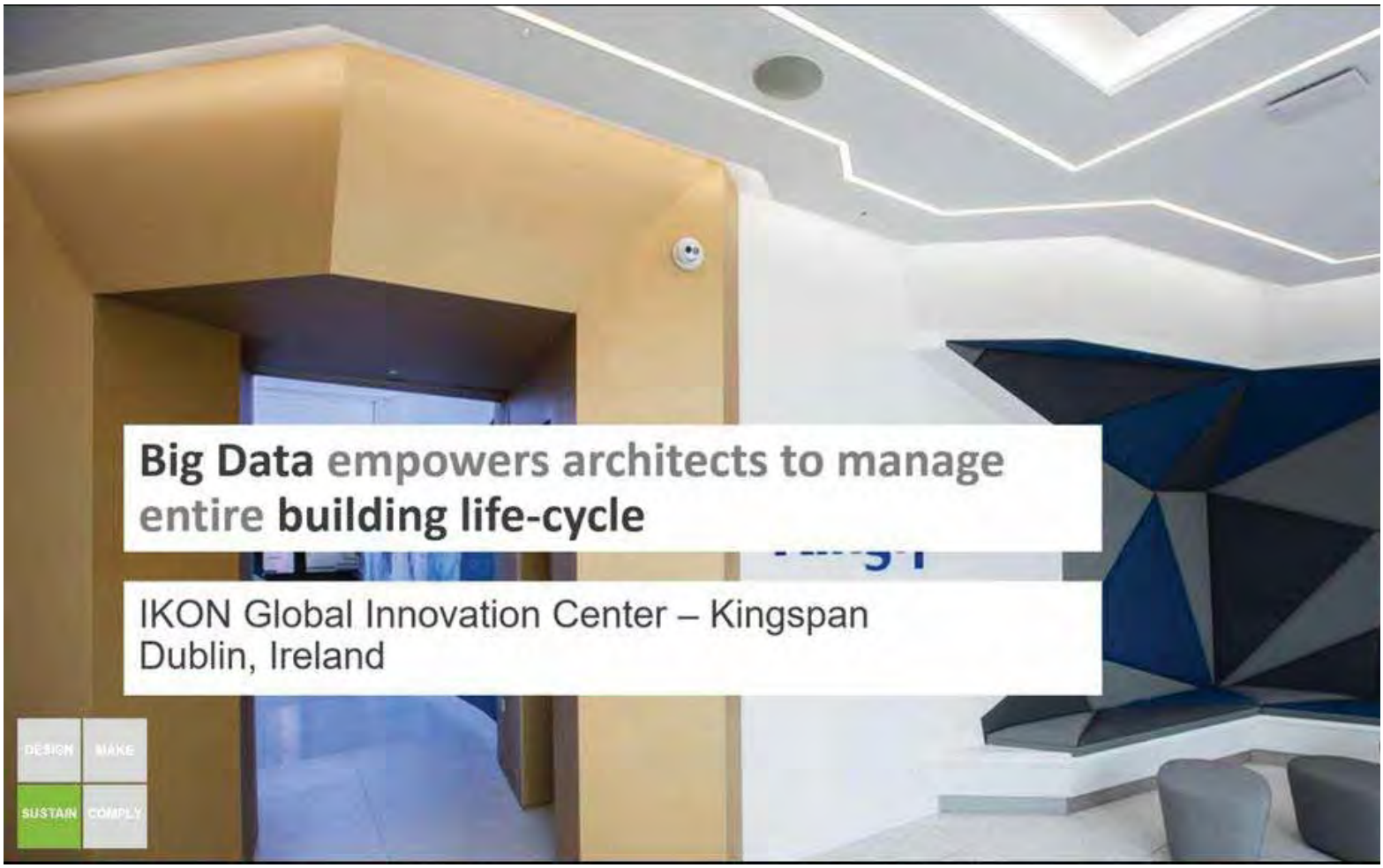


Big Data provides insight and predictability

Array of Things (AoT) – University of Chicago and Argonne National Laboratory

"This is a Fitbit for the city that will allow [City of Chicago] to collect a really wide array of environmental data… which will help us make better decisions about what types of infrastructure to invest in"

- Prioritize based on biggest impact
- Data-driven decision making
- Control of resources ensuring efficiency and increase safety
- Reduction in waste and emissions
- Significant Cost Savings for municipalities
- Improved connectivity that allows strong local economy



Systems management

Minimize energy consumption

Respond to human activity

Digital Twin

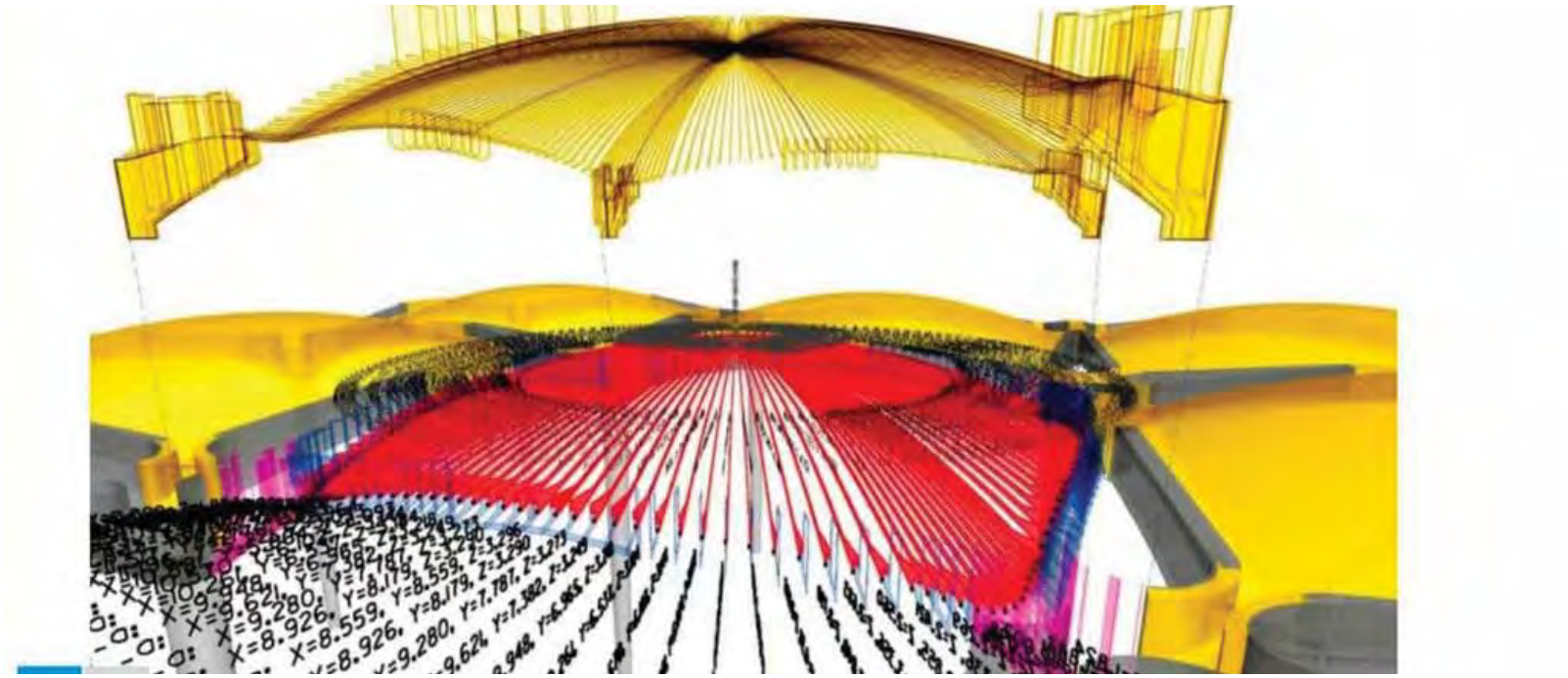
Support the circular economy

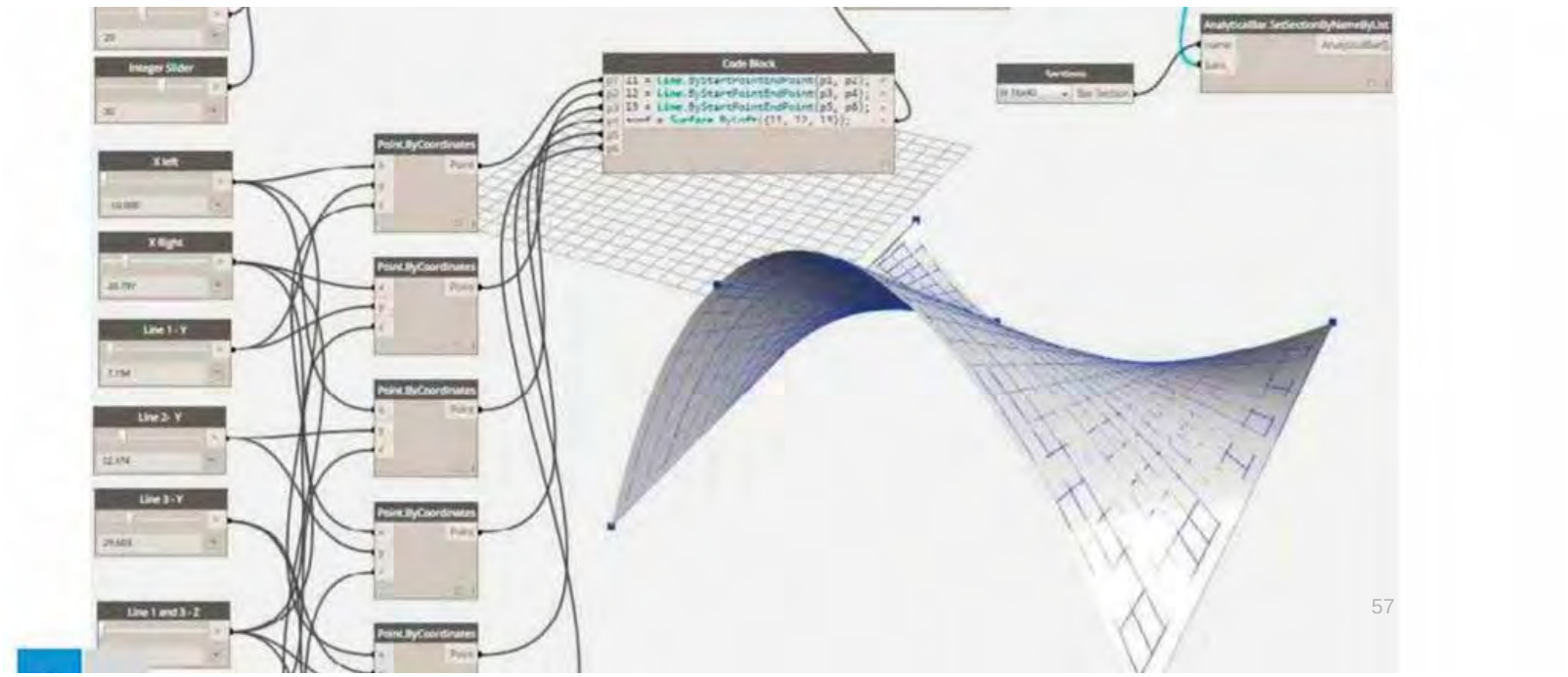
"For instance, we can anonymously gather data pegged to people, behavioral patterns, and time of day. Through this, we're better able to live up to the idea of performance products for performance environments. Catering our buildings to the behavior of their occupants is already translating into things like improved insulation performance to gain more space."

Brian Glancy, Kingspan's head of BIM strategy

The ability to do **MORE**
[impact, change, value, information]
with **Big Data**

Queen Alia International Airport –
Foster + Partners





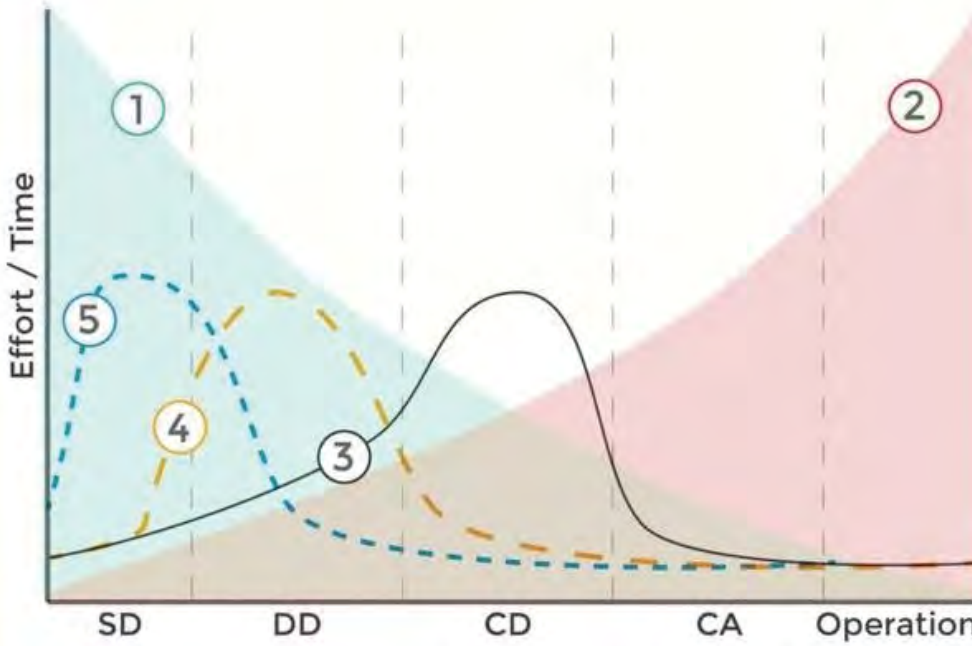

DESIGN
MAKE
SUSTAIN
COMPLY


DESIGN
MAKE
SUSTAIN
COMPLY

DATA & AUTOMATION

Workflow benefits

1. Ability to Impact Cost & Functional Capabilities
2. Cost of Design Changes
3. Traditional Design Process
4. BIM Design Process
5. Data Driven Design Process



DATA & AUTOMATION

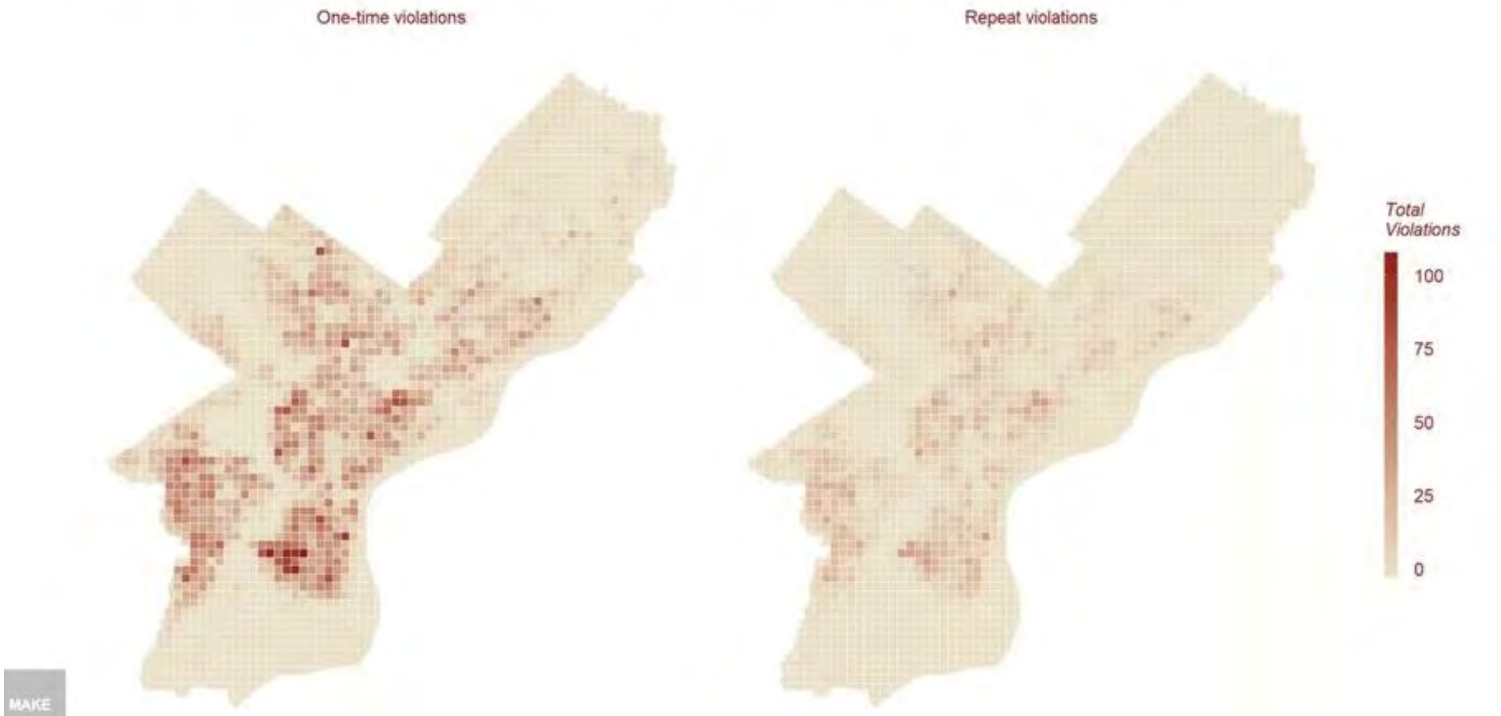
Workflow benefits

Reduce Rework | Improve Quality

Make Way for Creativity

Followup Building Inspections Results

Relative densities of buildings that passed after initially failing an inspection (left) and those that failed (right)



Source: Azavea, Data: Philadelphia Department of Licenses and Inspections

MAKE
COMPLY

> **The very existence of Data-Smart Cities Solutions Initiative is telling about the groundswell of support for a new paradigm in city decision-making: cities can improve their inhabitants' quality of life by implementing data-driven processes that empower their departments to provide better services.**
>
> Data-Smart Cities Solutions Initiative

Increase satisfaction through greater value creation and earlier decision-making

Reduce project lifecycle costs with proactive maintenance

Increase profitability with improved resource allocation

Improve safety with data-driven infrastructure design

No Action is not an Option

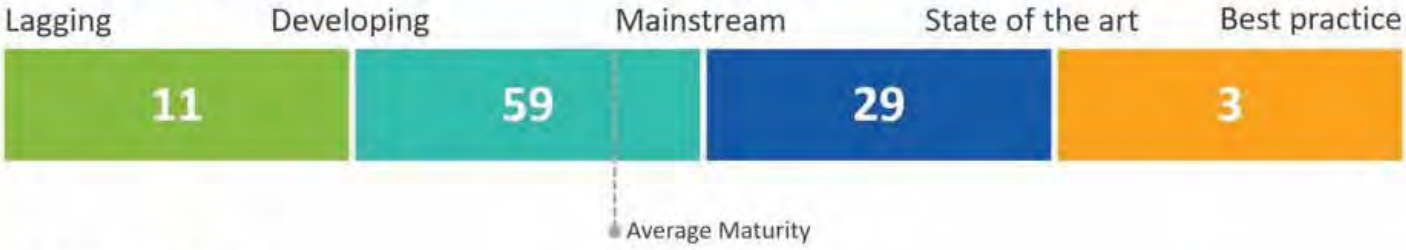
Miss out on having a bigger impact on the entire building process as a company

Inability to transform into a new business model & grow (Current econ landscape forces niche, boutique approach or absorb and grow - getting tough for mid tier companies)

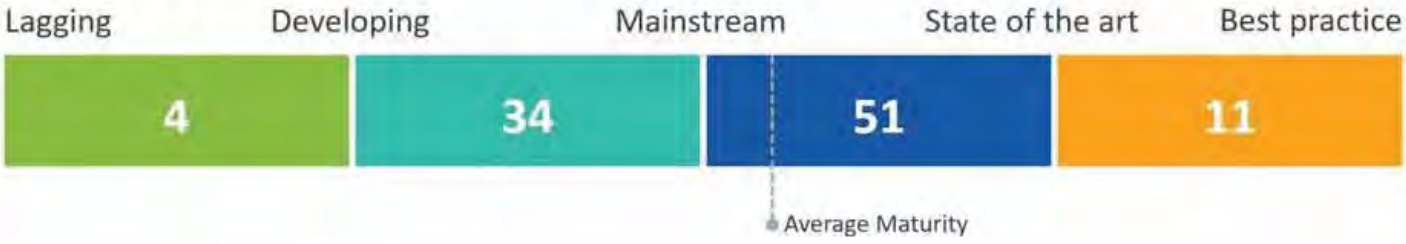
No change means less predictability and as a result less reliability and more liability

Distribution of Companies by Data Maturity

2016 Survey (%)



2019 Survey (%)



What is at stake?

Short term investments into R&D, resources, etc for long term gains

Company level commitment to digital transformation that can potentially change their business model

Traditional way of doing business

PROACTIVE ENGAGEMENT

Plan

Self Reflect

Act

URBAN RESILIENCE AT ULI

AIA Florida

Urban Land Institute Center for Sustainability and Economic Performance

Urban Resilience at ULI

LEAH SHEPPARD, MANAGER, URBAN RESILIENCE PROGRAM

FLORIDA AIA STRATEGIC COUNCIL

JUNE 2020

IMAGE CREDIT: FIU EDA

Urban Land Institute

- Global membership organization of 42,000+ in the real estate and built environment industries
- Organization includes 50+ local District Councils in ULI Americas
- Mission is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide
- Sustainability portfolio addresses energy, health and urban resilience, with a focus on the business case for sustainability.

Urban Land Institute

1

ULI's Urban Resilience Program

Strategizing for buildings, communities, and cities to be more resilient to the impacts of climate change

- Conducting Research
- Advising Communities
- Supporting Local-Level Resilience Work
- Convening Leaders in Resilience

Urban Land Institute

Resilience Building Coalition

- Long standing partnership with AIA and the National Institute of Building Sciences (NIBS) and almost 40 other non-profits in the building design and construction industry
- The Coalition is a vehicle to leverage partners' skillsets and memberships and coordinate efforts to enhance resilience of our nation's buildings, infrastructure, and communities
- Regular convenings virtually (and eventually in person again)

Urban Land Institute

Business Case for Resilience in Southeast Florida

Project Overview

- ULI has partnered with the Southeast Florida Regional Climate Change Compact to regionally examine the economic and fiscal impacts to public and private property under various sea level rise and storm scenarios.
- Goal: Identify **return on investment for resilience** and adaptation measures that considers the risks of sea level rise, coupled with other flooding risks that are applicable to Southeast Florida.
- Project Partners
  - Florida DEP
  - Broward, Miami-Dade, Monroe, and Palm Beach Counties
  - Business Community
  - Philanthropy
  - AECOM

Urban Land Institute

4

What is the "Return on Resilience"?

Flooding affects property value

A community's ability to adapt to future conditions.

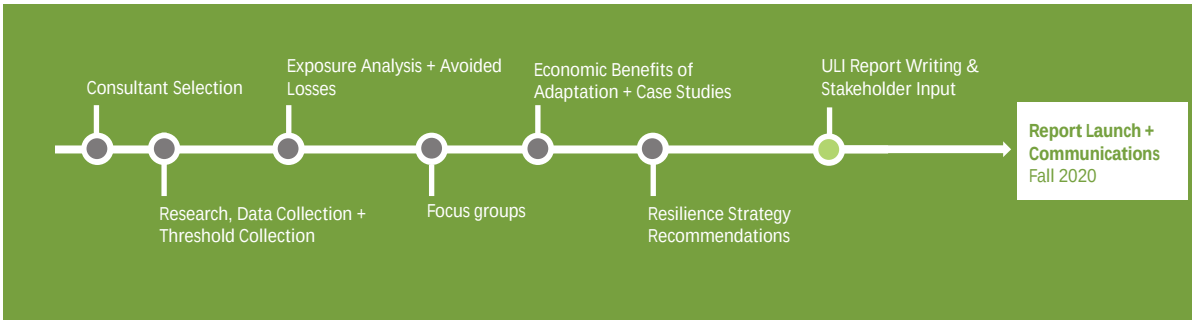
Private Sector Benefit

Public Sector Benefit

Urban Land Institute

5

Project Outline & Milestones



Research: ROI for Resilient Development

- Developing Urban Resilience (DUR) is an online case study library that features real estate development projects that showcase best practices in resilient design.
- Examples of value add in profiles:
  - Avoided losses/ Business continuity
  - Increased likelihood of/speed for permitting
  - Opportunities for enhanced market value or faster lease-up
  - Enhanced attractiveness to tenants/Brand value
    - Enhanced user experience
    - Enhanced aesthetics and placemaking
  - Energy and water usage reductions
  - Extended building life
  - Opportunities for decreased insurance premiums
- ULI welcomes nominations for additional projects to profile

Learn more at https://developingresilience.uli.org/

Technical Assistance for Cities

- ULI Advisory Services: Providing land use and development advice for cities geared towards enhancing resilience;

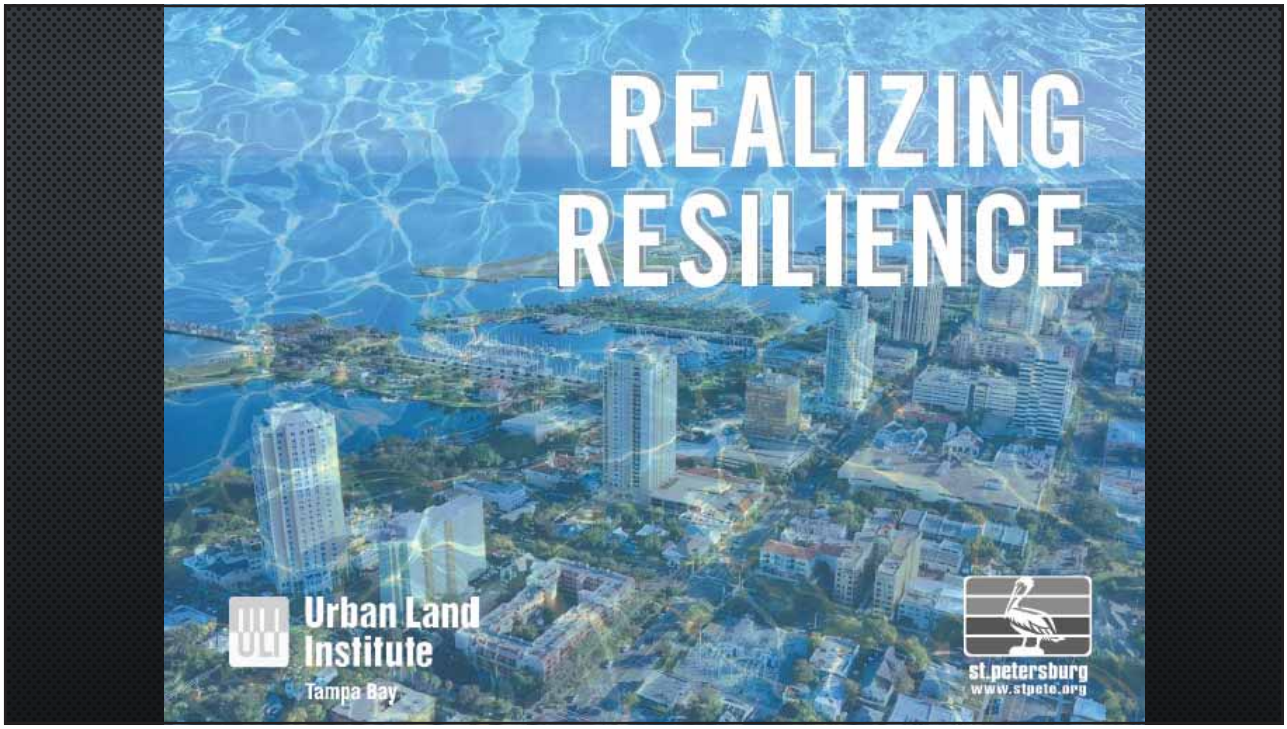
- Recent FL projects:
  - St. Petersburg
  - Downtown Miami
  - Downtown Fort Lauderdale

8

Miami Beach, Florida

Example of Action from Technical Assistance

- ULI was invited to critique the city's existing stormwater management and sunny day flooding strategy: a $600 million program to elevate roads and install pumps funded through a new stormwater fee
- Recommendations from the panel focused on utilizing wholistic flood models, broadening their approach to investments in resilience, and maximize green spaces
- Since the panel, the city …
  - Released two major RFPs inspired by the report's recommendations – for integrated flood modeling and a blue/green infrastructure consultant
  - Is adding for professionals with water management expertise to Planning Board, Historic Preservation Board, and Design Review Board to make sure that all land use decisions have the benefit of this perspective
  - Adopted the panel's guiding principles into the Comp Plan update



We wish to thank the Urban Land Institute's Urban Resilience Program and the Kresge Foundation for the generous support that enabled the Urban Land Institute of Tampa Bay to host the "Resilient City Workshop" with the City of St. Petersburg.

Without this financial support, the in-kind backing and commitment of the City of St. Petersburg and the volunteer time of the ULI team of experts, the workshop and this report would not have been possible.

A special thanks to Sharon Wright, Sustainability Manager for the City of St. Petersburg, for partnering with ULI in this effort. Thanks to everyone who participated and contributed insights during the two-day workshop.

Report published April 2017

ULI PANEL MEMBERS

James Cloer, Downtown Development Strategies
Zelalem Adefris, Catalyst Miami
Katharine Burgess, Urban Land Institute
Leigh Fletcher, Fletcher & Fischer
Jeffrey Hebert, City of New Orleans
Lee Kelso, Green Coast Enterprises
Larry Moore, Tampa Housing Authority
James Morley, Miami-Dade County
Taylor Ralph, REAL Building Consultants
Arlen Stawasz, Perkins+Will

Urban Land Institute
Tampa Bay

st.petersburg
www.stpete.org


+ LEAD BY EXAMPLE: RESILIENT CITY DECISION MAKING
+ ADAPT TO THRIVE: SHIFTING FROM BUSINESS AS USUAL
+ HARNESS OPPORTUNITY: ADAPTING TO THE CHANGING ENVIRONMENT
+ RESILIENT LIVING: CREATING CONNECTED & STRONG NEIGHBORHOODS
+ IDENTIFY MESSENGERS: ESTABLISHING BOLD AND STRATEGIC COMMUNICATIONS
+ COLLABORATION: FORGING NEW PARTNERSHIPS


ULI Urban Land Institute Tampa Bay
BUILDING RESILIENCE IN THE ST. PETE CHHA
ULI TECHNICAL ASSISTANCE PANEL (TAP)
JUNE 2019

TAP SCOPE

- **Evaluate the draft zoning standard and comprehensive plan amendment.**
- **Provide other recommendations pertaining to the draft CHHA standard and introducing increased density in the CHHA.**

Urban Land Institute
Tampa Bay

TAP PANELISTS

- **Jim Cloar**, Downtown Development Strategies (TAP Chair)
- **Chris Ahern**, Applied Technology & Management
- **Michael Antinelli**, Brizaga, Inc
- **Leigh Fletcher**, Fletcher & Fischer
- **Nick Herring**, Framework Group
- **Manuela Powidayko**, City of New York
- **Kristine Retetagos**, KAST Construction
- **Whit Remer**, IBHS
- **Taryn Sabia**, USF School of Architecture & Design
- **Jeremy Sharp**, City of Norfolk
- **Siobhan O'Kane**, ULI Executive Director
- **Jenna Wylie**, ULI Manager

Urban Land Institute
Tampa Bay

Ways to get involved

- Contribute to research as an interviewee or peer reviewer
- Nominate a case study for Developing Urban Resilience
- Host or attend an event
- Participate in a Technical Assistance or Advisory Services Panel
- Invite ULI to provide technical assistance to a local community or organization


Urban Land Institute

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Resilient Land Use Cohort

Welcome Tampa Bay!

- Supported by JPMorgan Chase
- RLUC will build a platform for knowledge sharing and technical assistance in 8 cities and their council networks
  - Technical assistance – each community will host either a TAP or ASP focused on addressing resilience through planning, zoning, land use, and development strategy
  - Knowledge sharing - Cohort members will be invited to convene in person and virtually to share lessons learned from TA projects, nurture recommendations into action, grow networks, and share resources over the next year and a half.
- Goal: Inspire Cohort cities to take action toward climate adaptation and resilience by leveraging ULI's membership and practical panel recommendations *(and encourage other communities to progress as well)*

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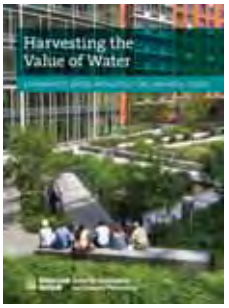
Thank you & more information

- Visit the Urban Resilience Program website: https://americas.uli.org/resilience
- All reports are available for free download in the reports section
- Case studies can be accessed at https://developingurbanresilience.uli.org
- Email: Leah.Sheppard@uli.org



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PRESENTERS

AIA Florida

Design Innovations for Resiliency and Regeneration

Vivian Loftness, FAIA

University Professor, Paul Mellon Professor

Track Chair, Building Performance and Diagnostics

Vivian Loftness, FAIA, is university professor and Paul Mellon chair at Carnegie Mellon University, serving a decade as head of the School of Architecture. With over 30 years of industry and government funding, she is a key member of Carnegie Mellon's leadership in sustainability research and education, the author of eight book chapters, and editor of the Springer Reference Encyclopedia Sustainable Built Environments. She has served on the board of directors for the National Academies' Board on Infrastructure and the Constructed Environment, the U.S. Green Building Council, AIACOTE, Phipps Conservatory, WELL Living Lab, and the International Living Future Institute. Vivian is a LEED fellow, NIBS fellow, senior fellow of the Design Futures Council, and one of the UK Building Research Establishment's 13 Stars of Building Science.

Urban Resilience at ULI

Leah Sheppard

Manager, Urban Resilience Program

Leah Sheppard is a Manager for the Urban Resilience program, which provides ULI members, the public, and communities across the United States with information on how buildings, development, and cities can be more resilient in the face of climate change and other environmental vulnerabilities. She is a contributing author for multiple ULI Publications, including "10 Principles for Building Resilience," "Harvesting the Value of Water: Stormwater, Green Infrastructure, and Real Estate, " and project briefs on the Developing Urban Resilience website. Recently, she represented ULI as a panelist during the National Planning Conference, sharing lessons learned from working with city leaders, real estate developers, designers, planners, and community leaders to enhance climate adaptation and hazard mitigation for communities. Leah enjoys working directly with communities across the country through ULI's Advisory Services program, where she works with ULI's expert members to promote creative, practical solutions for complex land use and real estate development challenges.

Before coming to ULI, Leah worked in Pennsylvania Governor Tom Wolf's Office, nominating health and environmental focused experts and practitioners for over 800 state-level boards and commissions. Leah began her career in sustainable development advising businesses on green infrastructure implementation strategies amid the roll out of Philadelphia's Green City, Clean Water plan.

Leah holds a M.P.S. in Sustainable Urban Planning with a concentration in Climate Change Management and Policy from The George Washington University and a B.S. in Community, Environment, and Development, with a specialization in Economic Development from The Pennsylvania State University.

Resilience Planning for Twenty-first Century Families: Trends and Strategies for Florida's Undeserved Communities

Katrinell Davis, PhD

Department of Sociology, African American Studies Center for Demography and Population Health, Research Affiliate

Dr. Davis is an Associate Professor of Sociology and African American Studies at Florida State University. She is also a Research Associate with the Center for Demography and Population Health at Florida State University. Dr. Davis earned a Doctor of Philosophy in Sociology from the University of California at Berkeley and specializes in health and work equity research. Dr. Davis was a Postdoctoral Fellow in the National Poverty Fellows Program at the University of Michigan.

Dr. Davis is a social change scholar inspired by the struggles of working-class people in urban areas who contend with extraordinary socioeconomic constraints, despite their best efforts. Through teaching and scholarship, Dr. Davis employs an intersectionality approach when examining how racial, gender and class-based biases shape health outcomes within low-skilled workplaces and low-resource communities. As a special needs advocate, Dr. Davis works with care givers and community groups seeking to secure sustainable and equitable outcomes when encountering unjust circumstances.

Dr. Davis' work has been published in numerous academic journals and books including Social Forces, Environmental Justice, and Feminist Economics. Her first book, Hard Work is Not Enough (UNC Press 2017), captures how the workplace experiences of African American women who secured access to well-paying bus operating positions in the 1970s were undermined by disparate employment practices and declines in job quality. Dr. Davis' most recent work focuses on the origins and health consequences of the water crisis in Flint, Michigan (Tainted Tap, UNC Press Forthcoming).

Big Data in AEC

Shannon Schmehl

Senior Technical Specialist – AEC

Autodesk

Metro Detroit, MI

Architectural Background:

- Project Management
- BIM Management
- Adjunct Professor at Lawrence Technical University

Ali Atabey

Senior Technical Specialist – AEC

Architectural Background:

- Designer
- BIM Manager and Tech Evangelist
- Instructor for digital fabrication and computational design

2020 STRATEGIC COUNCIL

AIA Florida

Nati Soto, FAIA

AIA Florida Immediate Past President & Strategic Council Facilitator

Natividad "Nati" Soto, FAIA, LEED AP^{BD+C} is a registered architect and interior designer in Florida. She has served the American Institute of Architects in local, state and national components, most recently as 2019 President of AIA Florida. She is a founding Board member of the Miami Center for Architecture and Design, serving as its President from 2015-2018. She co-founded AIA Miami Women in Architecture Committee. Nati is professionally and personally dedicated to leading efforts that result in positive outcomes. She is passionate about architecture, mentorship, diversity and inclusion, and resilient communities for all.

Nati is President of Ferguson Glasgow Schuster Soto, Inc. Her Firm, with a rich history that began in 1955, offers expertise in health care, corporate and municipal architecture and interior design. FGSS designs projects ranging from large corporate headquarters to small boutique buildings, creating architecture that withstands the test of time and reflects client identity.

Nati is also an involved alumnus of the University of Miami School of Architecture, where her Firm established and maintains a scholarship that benefits African American architecture students. She lives in Coral Gables, Florida with her husband, Howard. She is proud mom to daughter Alex, also an architect, son Daniel and daughter-in-law Alexandra.

Jaime Birmaher

Jaime Birmaher is President and CEO at Digital Drafting Systems (DDSCAD), an Autodesk Gold Partner currently located in Miami Lakes, Florida. He has served the AEC Community in the Design Software and Hardware Technologies space for over 35 years. Jaime graduated with a Bachelor of Science in Electrical Engineering and a Master of Science in Engineering Management from Florida Institute of Technology (FIT) in Melbourne, FL. He is highly active with AIA Florida and loves helping his customers achieve their goals, while using the software tools and implementation services his organization provides. He is passionate about technology in general, especially as it applies to buildings and construction. He is "all in" with BIM, "Digital Twins", Generative Design, 3D Printing, and measured Artificial Intelligence. Some of his hobbies include cars, running, traveling, and drones.

Sonia Chao

Sonia Chao is the Director of the Center for Urban & Community Design at the University of Miami's School of Architecture where she also serves as a Research Associate Professor. Dr. Chao is known for her work on resilient architecture and sustainable design in South Florida and throughout the Caribbean basin. Chao founded and leads the Resilient Miami Initiative, which engages faculty from several institutions of higher education to collaborate with Florida government officials to envision resilient design solutions for historic neighborhoods in Miami-Dade County. Chao's current research is supported by a National Science Foundation CRISP grant, to study the connections among a city's built and social layers. Dr. Chao and her colleagues will integrate social sciences, infrastructure and urban design, to create new resilient design paradigms for coastal cities. As a scholar committed to community practice, Dr. Chao's work informed sustainable rebuilding following Hurricane Andrew and has drawn on both modern and traditional building practices to build affordable housing in Haiti. Her work has gained the support of major philanthropies and government agencies, and she lectures nationally on resilient cities and historic preservation. Dr. Chao is an Executive Board member of the Florida Climate Institute and served as a leader of the Resilient Redesign III Charrette for the Southeast Florida Regional Climate Change Compact.

Keith Greminger, AIA

Keith serves as the Principal of Urban Planning and Design in the Tampa office for Stantec. Keith has 39 years of experience in architecture, urban design and community planning. Initiating his career with Hellmuth, Obata and Kassabaum (HOK) he spent 20 years as a project designer, first in their corporate headquarters of St. Louis where he worked with Gyo Obata and established his design philosophy. Keith led a design team that won an international design competition for a mixed-use development in Jakarta Indonesia and established HOK's first international office in Hong Kong. Returning to the US, Keith came to Tampa as the project designer for the Tampa Convention Center and Orange County Conventions Center and followed with such local projects as: the Florida Aquarium; the Sam Gibbons Federal Courthouse; Raymond James Stadium; the Pinellas County Courthouse and led the Planning for Tampa's Bid as the US Host City for the 2012 Olympics. Post HOK, Keith joined AECOM (URS at the time) for seven years and developed several Community Redevelopment Area Plans (CRAs) within the Bay aera including East Tampa CRA; Drew Park, Tampa CRA. In 2009 Keith Joined the Tampa

office of Gensler and continued his CRA work with the East Gateway CRA in Clearwater, along with multiple retail design projects that included Hard Rock Cafes in Dallas, Seattle and on the Hollywood Strip. Other projects included collaborate with Gensler DC on mid-eastern city planning in Saudi Arabia. As the by-product of a Gensler Master Plan collaboration, Kimley-Horn offered Keith a Practice Builder role for their Urban Design and Community Planning practice where he participated in the expansion of the Tampa and St. Petersburg offices with such local projects as: Nathan Benderson Aquatic Park; Perry Harvey Park, Tampa; Imagine Clearwater-urban waterfront master plan; Sims Park New Port Richey and the Tampa Riverwalk at Kennedy Plaza, winner of the American Planning Association (APA) Best Places in America, 2018. He has led several planning and design teams assisting private and public clients with delivery of their projects by creating notable developments, memorable places, livable neighborhoods and connected communities.

As a resident of Tampa for more than 34 years, Keith has and continues to serve in leadership roles in numerous professional and civic organizations committed to the practice of health and equity, place-making and improved quality of life in the built environment.

Jim Painter

Jim is the Executive Director of the Florida Concrete Masonry Education Council, a non-profit operating as a direct-support organization of the Department of Economic Opportunity with the purpose of bringing together masonry manufacturers and contractors in an effort to plan and conduct training programs, improve access to masonry education, develop outreach programs to ensure diversity, inform the public about the sustainability and economic benefits of concrete masonry products. Jim is also the co-owner of Painter Masonry, which has been in business for over 40 years. He has served as Gainesville City Commissioner and as Mayor.

Stephen Panzarino, AIA, AIA Florida President

Stephen is the Regional Director of Architecture of AECOM's Southeast Region, Stephen has more than 35 years' experience in the architecture industry, ranging from master planning, programming and design to transition services for ambulatory care facilities, complex acute hospitals, biomedical sciences buildings, corporate facilities and large scale mixed use developments. Stephen has been actively involved in numerous volunteer organizations, including the AIA Florida Gulf Coast. Stephen has served over 10 years as a member of AIA Florida and has the honor and privilege of being the 2020 AIA Florida President.

Lindsey Perez, AIA

Lindsey Piant Perez is one of DLR Group's sustainable design experts and serves as a national resource on LEED, Green Globes, and Architecture 2030 project planning and certification processes.

A passionate advocate for integrated design, she works with project teams to incorporate sustainable strategies in every project. Lindsey is highly proficient with communicating and maintaining open lines of communication between all parties, with personal attention to every detail.

"Some of my best ideas come to me after spending time with my family. There's something about breaking away from the project that refuels the creative tank."

Lindsey has been involved with more than 500,000 SF of renovation projects for educational clients and is intimately familiar with the management and coordination of these K-12 and Higher Education projects.

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