CONNECTION

THE ARCHITECTURE AND DESIGN JOURNAL OF **THE YOUNG ARCHITECTS FORUM**

This issue focuses on the topic of
RESILIENCE

Featuring architects, designers and emerging professionals that are changing the face of the profession. We will explore how architects and specifically emerging professionals are leading the effort in resilient design across the globe.

June 2015
VOL **13** ISSUE **03**

AHEAD OF THE SURGE

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1735 New York Ave, NW
Washington, DC 20006-5292

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www.aia.org

CONNECTION is a the official bimonthly publication of the Young Architects Forum of the AIA.

This publication is created through the volunteer efforts of dedicated Young Architect Forum members.

ON THE COVER:

AHEAD OF THE SURGE
Image credit Illya Azaroff

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AHEAD OF THE SURGE

BRACE FOR IMPACT

Our country is faced with a number of fiscal crunches, many of which are a clash of political ideals with headline grabbing taglines and a passionate following. Think education, entitlements, or the economy. Many of these issues are seen as ways to improve the quality of life for the average American citizen and lead to enriched lifestyles. However, few of the issues are truly life saving measures, except something like infrastructure. Key pieces throughout the country have consistently been graded a hair above failing. This runs the gamut from highways, bridges and railroads to water mains and drainage pipes. They are taken for granted that they will always work, except when they don't. Unfortunately, when they collapse, loss of life and property come with them. Yet despite the calls to action, federal capital budgets have actual been cut and we continue to keep our head in the sand until the next disaster.

Infrastructure has a next of kin in the battle for preventative measures and it's a movement called **Resilience**. Much of the public knows it primarily as disaster recovery in the face of hurricanes like Katrina or Sandy. But it goes much deeper than rebounding from disaster and begins with bracing for impact ahead of the storm. As architects, we have the chance to be at the leading edge of a vastly important public service with a seat at the table among key decision makers.

While infrastructure has many key similarities with resilience, one of the key differences is the scale of investment. When we think infrastructure, we think big budgets, tons of concrete, lane closures, and inconvenience in the face of progress. Resilience can occur at that scale, but many of the small victories occur at the level of an architectural specification. Let's take the Hurricane Ready infographic for example. The recommendations include an increase in weather stripping, heavy gauge washers and continuous strapping reinforcement down to the foundation. Combined, these improvements might carry a few extra dollars per SF to the overall project, but could save tens of thousands in the face of strong winds. As long as we continue to build in areas prone to disaster, simple measures are the first step in protecting our clients from future loss.

An additional small scale measure where resilience can have big impact, and keep it out of the budget as a hard cost, is the ability to plan. This country and many others around the world have seen cabinet and deputy positions created in order to deal with the growing needs of resilient design. Planning efforts, funded by small grants and non profits, are almost as essential to the capital expenditure on the improvements themselves. Plans help educate the public on the importance and becomes the framework for future policy decisions. Once a plan is in place, it guides administrations on how to allocate funds and can even require development to be more resilient. Every dollar invested in upfront work therefore, comes back multi-fold when public and private entities move forward with projects.

Another advantage that resilience has over infrastructure is a greater ability to relocate. The majority of legacy infrastructure in this country doesn't have an option on where it is or where it could be. Natural boundaries will still exist and mankind will still need to go over, around or under them. And for items like the railroad, taxpayers may have the option to reroute them, but are hindered by the extreme financial burden associated with laying miles of new track. For the most part, we are stuck with where highways run, where bridges cross and how our water is distributed. Development however, has the option of choosing areas that are less prone to risk. We don't have to build in floodplains, and in many cases are financially discouraged from doing so. By having the option to select better suited sites, architects immediately have more flexibility when advising clients.

Resilience has the look and feel of infrastructure and in many ways would vastly benefit from the same types of federal or state funded budgets for capital improvements. However, it also has the advantage of small scale, big impact. As architects, we are constantly fighting fiscal battles with our clients, councilpeople and contractors, but this is one where we have a large arsenal to choose from. Let's act progressively, proactively and build smartly ahead of the surge.

Jeff Pastva, AIA

Jeff is the 2015-2016 Communications Director of the Young Architects National Advisory Committee of the AIA, the Editor-in-Chief of YAF CONNECTION and a Project Architect with JDavis in Philadelphia.

This issue of *Connection* will hit you hard with the facts of our future, a subject near and dear to my heart. It is not to be taken lightly, nor is it meant to scare you away from what is to come with climate change and increased risk to our communities. It is to make you into leaders of the future, embrace the challenge, and forge ahead armed with a passion for innovation and resilience with a capital R.

I have been engaged in designing for disasters through research, practice, and study for well over a decade. My first hand experiences growing up in tornado alley have had a great impact on this part of my career and I have a passionate resolve that will draft you into the growing ranks of resilient leaders. When I was asked to serve as a guest editor, I gladly jumped at the chance. And If you know people who work with disasters, they don't question. They jump in and just do what is needed without hesitation.

In this issue we take up resilience in all its complexities, derivations, and practice. To get at these elements, I have enlisted a team of friends and colleagues that are engaged in resilient practice all around the world and at all scales -- from resilience with a capital R to initiatives involving the small r of resilience. Michael Lingerfelt, FAIA, will take you on a journey of a path less travelled to practice and resilience, while Dan Horn, Assoc. AIA, will give you a firsthand account of disaster at his doorstep that activated his fellow (then) classmates and him into creating ORLI - Operation Resilient Long Island. This issue features Austin Reed venturing into the wide world where he has set up ORLI Philippines. Continuing on the world stage, my friend Henk Ovink, tackles the Big R of resilience and resources on a global scale through Rebuild by Design and the Delta Approach. Fellow Emerging Professional (EP), Jessica Sheridan, AIA, tells us about transforming communities from the ground up.

We take note of EPs in NoLa, Jacob Dunn and Aron Chang, whom are deeply vested in the science of transformation and building resilient communities. Jon Penndorf interviews Harriet Tregoning, a true rock star of urban planning. We check in with the AIA Architects Foundation and Sherry-Lea Bloodworth Botop and the highly collaborative Centers for Resilience opening around the country, along with highlights of ongoing AIA activities such as the work of the DAC - Disaster Assistance Committee, a little known national committee doing great work everywhere. And what issue would be complete with a shout out from Lindsay Woodson on 100 Resilient Cities of the Rockefeller Foundation and how resilience is being achieved through Design Policy in LA. Ready for more? Well, if you attended the 2015 AIA National Convention in Atlanta there is plenty.

The news from Atlanta is very good; we featured a resilience track at Convention for the very first time. It was composed of 20+ programs on shelter design at all scales, Resilient regional Approaches through the AIARWG, Hurriplan training, programs on leadership opportunities, issues related to water, tools for Resilient rating systems and a display of great work from around the country looking at a full spectrum of hazards. The track was assembled with the help of Rachel Minnery, FAIA and Paul Karrer at AIA National along with a core group of experts including Don Watson, FAIA, Dean Sakamoto, FAIA, Z Smith, AIA, Michael Lingerfelt, FAIA, and many others. The track not only brought a needed focus to this essential topic, but brought together many of the writers of this issue of *Connection* and allowed space for many resilience leaders from around the country to meet for the very first time.

So brace for impact!
Your resilient overload starts now!

Illya Azaroff, AIA

Illya *is a founding Partner at +LAB architect PLLC, an Assoc. Professor, New York City College of Technology (CUNY). He is a Technical Advisor to the Federal Government for the NDFR-National Disaster Recovery Framework, Works with the Department of Homeland Security, FEMA and regionally with RCPT-Regional catastrophic Planning Team, OEM, and DCP- Department of City Planning -NYC.*

HOW AMERICAN ARCHITECTS
CAN HELP PLAN FOR A RESILIENT FUTURE

Sherry-Lea Bloodworth Botop *has been involved in multiple design recovery efforts including the Gulf Coast region, Haiti and South Africa. She has extensive experience in community development, nonprofit leadership, advocacy, community development and fundraising. She helped raise millions of dollars and oversaw the allocation of funding for architect-led affordable housing programs for residents in Mississippi including CDBG programs, as well as philanthropic projects with the Oprah Winfrey Foundation, the Ford Foundation, the Kresge Foundation and others. As Executive Director of the new American Institute of Architects Foundation, she is overseeing the National Resilience Initiative aimed at developing innovative approaches for architects to learn, engage and create more resilient communities. Her work has been featured on The Today Show, and she has been quoted on the topics of community rebuilding and resilience in outlets including the New York Times, Wall Street Journal and Architectural Record.*

I had the privilege earlier this year of taking part in the first Chief Resilience Officers Summit, led by the Rockefeller Foundation's 100 Resilient Cities initiative. The gathering of the first 33 CROs in New Orleans was to work on sharing resources and creating a collaboration platform that can help cities become less vulnerable to natural disasters and other risks.

In August 2005, Hurricane Katrina swept across Mississippi and Louisiana, killing more than 1,800 people and leaving a trail of damage estimated at $108 billion, making it the costliest natural disaster in US history, and one of the deadliest. My hometown, New Orleans, became a symbol of the destruction, as well as a nation's failure to prepare for disasters and mitigate their damage. Less than a decade later, much has been done by the architecture profession to prepare for future disasters. Since Katrina, the Architects Foundation (formerly the American Institute of Architects Foundation), has worked to take a lead role in disaster recovery efforts around the country.

What's still needed, though, is the coordinated expertise and counsel and planning of the architecture profession in many cities before disaster strikes.

How would we do this? As a start, the Architects Foundation last summer launched the National Resilience Initiative (NRI), which is charged with raising awareness of the critical role that design and the built environment play in strengthening resilience—and preserving the identity—of communities across the United States.

The centerpiece of this effort is a network of what we call Regional Resilience Design Studios that will share information and educate local stakeholders about resilient building and planning practices and provide direct design and building services when possible. Effective preparedness and mitigation activities will be delivered through the training, technical expertise, and networks that equip local architects to strengthen their communities before disaster strikes.

Leveraging the work of existing higher education architectural schools and institutions specializing in resilience, the Architects Foundation has already networked three of these Regional Resilience Design Studios – at the New Jersey Institute of Technology's Center for Resilient Design; at Arkansas University's Community Design Center at the Fay Jones School of Architecture; and at Mississippi State University's Gulf Coast Community Design Studio, located in Biloxi, Mississippi.

The University of Arkansas Community Design Center, for example, addresses core challenges in the built environment by emphasizing transit-oriented development, watershed urbanism, low impact development, context-sensitive street design, agricultural urbanism, and smart growth urbanism. The school's top three project types are (1) smart growth urbanism (particularly related to our tornado recovery planning projects); (2) context-sensitive street design related to revitalization of walkable downtowns; (3) and low impact development work associated with new practices in the ecological management of urban storm water runoff.

Mississippi State University's Gulf Coast Community Design Studio was created to respond to Hurricane Katrina and has evolved from disaster recovery to long-term efforts of resilience. The design studio has a full-time staff of planners, architects and landscape architects and works in collaboration with many municipal and community organizations on projects that address mitigation and adaption of households and communities facing hurricane risks, the economic challenges of living in expanded flood zones and coastal environments threatened by increased development and sea level rise.

Besides New Jersey and the Gulf Coast, we hope to establish studios in the Northeast, West Coast and Upper Midwest.

The Regional Resilience Design Studios will provide:
• training and professional development for architects and other building professionals in techniques that address known regional hazards, mitigate risk and avoid long-term disruptions;
• education and outreach for home- and business-owners and policymakers to raise awareness of risk and of preparedness and mitigation strategies that promote community resilience; and
• design and construction services for communities throughout the region (including technical advisory services, open source sharing of design solutions, and information on experts affiliated with the studios.

Collaboration will be instrumental and essential to achieving the aims of the National Resilience Initiative. The Rockefeller Foundation's 100 Resilient Cities Initiative will be an important partner in the selected U.S. cities on initiatives relating to design and the built environment. Together, these organizations will bring an unmatched track record in disaster preparedness, resilience training, reconstruction projects, and access to an extensive network of architectural, engineering and builder communities. ■

Sherry-Lea Bloodworth-Botop
Executive Director of the Architects Foundation

ADVOCACY

INTEGRATING EMERGING PROFESSIONALS INTO RESILIENT DESIGN STUDIOS

Resilience is the capacity to adapt to changing conditions and to maintain or regain functionality and vitality in the face of stress. It is the capacity to bounce back after a disturbance or interruption.
The AIA Architects Foundation's Regional Resilience Design Studios are rapidly sweeping the nation. The first of the studios opened at the New Jersey Institute of Technology's Center for Resilient Design, based in Newark, New Jersey. Two new studios were announced at this year's AIA convention in Atlanta – Mississippi State University's Gulf Coast Community Design Studio, part of the School of Architecture in the College of Architecture, Art and Design; and the University of Arkansas' Community Design Center at the Fay Jones School of Architecture. The ultimate goal of the AIA Architects Foundation is to create a network of Regional Resilience Design Studios across the country.
All three studios thus far are located in colleges of architecture and are a great way to educate our Emerging Professionals on smart growth of communities and building a sustainable environment. These studios will challenge us to transform our cities to be more resilient against extreme disasters and create opportunities to make our environments better places to live.
Emerging Professionals should be at the core of these studios, learning, developing, sharing ideas and boasting inspiration. We all know change doesn't happen overnight. Including EPs in these studios now, will ensure the efforts are carried through for generations to come.
If you are an EP, I urge you to get involved and find out more about these studios. If you are already part of a Resilient Design Studio, make sure you are including Emerging Professionals in your discussions and work. Information can be found on the AIA's webpage. ■

Katie Harms, AIA
is an architect with OPN Architects in Cedar Rapids, IA. She has a long history with Emerging Professionals, including, multiple positions for AIA Iowa and the Central States Region. Nationally she served on to the AIA National Associates Committee as the Advocacy Director and is currently the Young Architect Regional Director for the Central States Region.

QUICK CONNECT

NEWS FOR ARCHITECTS ON-THE-GO

by Beth Mosenthal

headlined

RESILIENT DESIGN STUDIOS CONTINUE TO EMERGE

by Beth Mosenthal

There are many applications of design that provide architects with various fields of expertise to pursue. From building typology to tools and technology, the breadth and depth of options and levels of specialization in the architectural profession is vast, and at times, almost overwhelming, when first trying to provide some guardrails to one's career path.

One path not often considered is an emerging specialization being championed by the Architects Foundation, an arm of the AIA meant to honor and advance excellence in design for the benefit of the public. Partnering with academic institutions and corporate sponsors, the Architects Foundation has encouraged the creation of "Regional Resilience Design Studios" in architecture schools throughout the nation.

Rather than waiting for disaster, design studios focusing on region-specific issues such as smart growth, context-sensitive street design, and low impact development work related to the ecological management of urban stormwater runoff, are being held in institutions such as the New Jersey Institute of Technology, University of Arkansas, and Mississippi State University.

Sherry-Lea Bloodworth Botop, Executive Director of the American Institute of Architects Foundation, explains the goal in the creation of new resilience design focused studios is to create a "national network of resilience design experts who can help communities become resilient and prepare both for disasters and the effects of climate change."

While specific in nature, the skills of design thinking around mitigating disaster by informed, regionally-sensitive design is a lesson applicable to all design practices and pursuits.

observed

I recently returned from a trip to Frank Lloyd Wright's winter Xanadu, Taliesin West. I couldn't help but notice the inclusion of art, or "art-ful" details throughout the space. From Asian relics to an entire courtyard devoted to the work of a Wright student-turned-sculptor, Heloise Crista, the depth and breadth of different media on the property speaks to Wright's fascination with treating architecture as both function and (art) form.- Beth Mosenthal, 2015

updated

What happened to Architecture for Humanity? Garrett Jacobs tells (and asks) us how to stay involved in mission-driven design work...

NEVER QUITTING:

How a pro bono design network is turning demise into the opportunity of a lifetime...

By Garrett Jacobs, Chair, AFH Chapter Network

Starting one's architectural career in New Orleans three days before Hurricane Katrina is bound to set them on a unique professional path, and that's just what I did.

New Orleans is a big character in my life, teaching me the significance of accessible neighbors and celebrated, living cultural heritage…as well as the political and economic implications of natural disasters. Throughout my time at Tulane, I sought every opportunity to partner with community groups to build and do work I found meaningful and relevant to the context. After graduation I struggled to continue finding these partnerships. So I followed the trail of progressive opportunity – I headed west.

In Oakland, California I landed some contract design work, and began hanging out with the San Francisco Chapter of Architecture for Humanity. Here, other designers were discussing the meaning of the profession and how we could best serve our neighbors. I immediately felt comfortable sharing my opinions, it was a safe space. We were defining a model of service to engage a much broader spectrum of clients – clients suffering from a disastrous economy or outright neglect. The chapter offered me opportunities to develop my skills as a project manager that my work hadn't; I managed clients, organized a team of volunteers and worked on organizational strategy. This kept me motivated and inspired by connecting me with like-minded passionate individuals.

Volunteering opened doors. My work, and persistence, caught the attention of AFH HQ. They asked me to support a couple short term projects and eventually to coordinate their intern program and the international Chapter Network. Collaborating with chapter leaders I realized my organizing strengths, as well as the shortcomings of a pro bono network trying to keep pace within an organization specializing in natural disaster recovery and corporate social responsibility. It turns out the chapters – the passionate volunteers – would outlast their parent organization.

In January 2015, Architecture for Humanity HQ closed its doors. The infrastructure they'd let organically grow in the form of mission-driven professionals all around the world, was suddenly faced with a very difficult decision: cease operations, continue as independent disconnected groups or form an autonomous, collective voice. Two weeks after the public announcement, 34 chapters committed to continue delivering their services to local community groups and providing tangible professional development opportunities.

Within weeks we had formed a group of 15 regional representatives to pursue a new organization, research appropriate business models and set values to proudly carry forward. We raised seed funding to hire a transition coordinator, and gather in person.

In April the leadership met in Detroit to present ourselves at the Structures for Inclusion (SFI) conference and engage in a day-long strategy session. Over the Summer, the Steering Committee and volunteer-driven subcommittees will be working with our transition coordinator to put the pieces of organizational autonomy in motion.

It's an open road ahead. We pride ourselves on an inclusive process, sincerely welcome feedback, and posit this question to readers:

If you could form an organization that embodied the values of why you became a designer, what would it look like?

Let us know – the door is always open. Here are a few ways to connect:

- Learn more about our work on our *transitional website*
- Follow our development on twitter: *@afh_chapters*
- Consider this an invitation to send us your thoughts: afhchapters@gmail.com
- Join a subcommittee and bring your voice to the table:

The Chapter Network is working to ensure we all have ownership of, and access to, what we're building - and that it's built to last. After all, that's the essence of community design, and we have to be true the whole way through. We want to ensure that no one will have to "go west" or go anywhere to do this work. Instead, they can receive and utilize tools and connections of mission-driven design right where they already are.

"Group Jump" at Structures for Inclusion in Detroit. Photo courtesy of Jacobs.

Phillip Anzalone, AIA is a founding principal at Atelier Architecture 64 as well as a professor in the Architectural Technology department of the NYC College of Technology. Phillip's firm focuses on the integration of novel materials , processes, and a research agenda derived by work from the academy.

What organizations are you involved in as an emerging professional?

I am active in the New York State AIA, serving on the Board of Directors as the Regional Director of the Young Architects Forum, exhibiting work in practice and education at the NYC Center for Architecture, organizing symposiums to address the future of practice, and collaborating on the 2015 Saratoga Design Conference. In addition I am a member of the Board of Directors for ACADIA, the Association for Computer Aided Design in Architecture, where I have presented work, published papers and organized conferences in the past.

What are some of the important issues that Young Architects face in today's industry?

I feel that one important issue that young architects face is establishing a foundation for their lifetime goal in practice. I have worked in a 'traditional' architectural office, as a building envelope consultant, taught part-time and full time, and finally established my firm about six years ago, which I continue to balance with my career as a full-time Professor. Emerging Professionals face a wide range of choices, with an equally wide range in security, risk and compensation, and could benefit greatly from understanding how their peers and established professionals have managed to build their career.

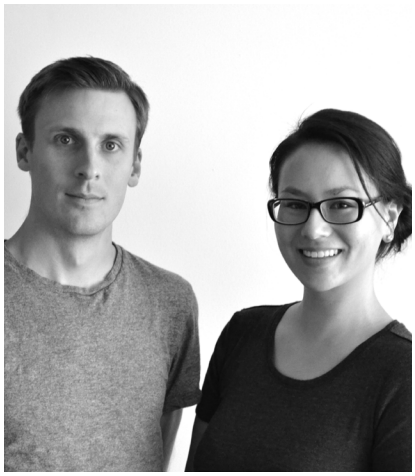
You have become a Principal in a firm and an active educator fairly quickly in the evolution of your career. What advice would you give to young architects hoping to pursue leadership opportunities in design and academia?

My path to being Principal of a firm and a Professor at a University took a considerable amount of time to develop, and is still evolving. I would advise Emerging Professionals to have patience and determination in choosing this path, especially as one needs to balance a life outside of work with these goals. My current University is my third academic appointment. Prior to founding AA64, which currently has 6 employees, my parents and myself, we practiced as a small partnership. I worked as a consultant and we developed research projects pro bono while both of us taught in order to build our firm. The path to a balanced successful career in practice and academia is rewarding, but difficult.

alternative practice

From architecture to Enclos to structural and industrial engineering, Audrey and Alex Worden are making multi-disciplinary waves from Brooklyn to Boulder, Colorado...

by Beth R. Mosenthal



BM: *What are your backgrounds (academically and professionally) and how did it get you to where you are now?*

Alex: A number of fortunate events have led us to where we are now. We both have a Bachelors of Science in Architecture from the University of Texas at Arlington. For our Masters we were both accepted to Virginia Tech. Audrey gained a Masters of Science in Architecture with a concentration in digital fabrication and I received my M.Arch.

We worked for a couple years in between degrees. My first job out of undergraduate was at a landscape and master planning firm. I worked there for a year and then joined the architectural studio where Audrey was working, 5G Studio in Dallas.

Audrey: I actually started out of undergraduate on the traditional path to architecture licensure. I had internships at architectural firms while in school, then I joined 5G Studio. While there, I was given the opportunity to manage many of the firms smaller projects like interior finish outs or remodels. I think that these experiences led to my interest in smaller scale spaces and furniture.

Alex: We wanted to get our master's degrees in order to explore the new interests we developed during our two years in the profession. Audrey and I both realized that working was hugely important in our development (rather than going from undergraduate straight into grad school.) After finishing our master's, we moved to New York. I was given the opportunity to join Enclos as one of their first three members of their New York Advanced Technology Studio.

Audrey: I took a position as a 3D designer with a branding firm, creating in store displays, primary packaging, and photorealistic renderings for luxury beauty brands. This was quite a departure from what I had been doing previously, but the work on the in-store displays and the manufacturing work of primary packaging intrigued me. Plus I learned quite a bit about branding while honing my rendering skills.

Alex: We were both fairly nervous about the new positions that were a departure from the traditional field of architecture, but we started to see how we could adapt the techniques we had learned in architecture and apply them towards these new roles. Enclos was specifically more integrated in the field, but from the side of the contractor, which was extremely eye opening and highly rewarding.

Audrey: During this time, some of the furniture and products that we had worked on were getting interest, so we started StudioTJOA. It became a convenient name to enter architectural competitions that we both were a part of. And we have been very lucky in that StudioTJOA has also given us the opportunity to attend and support workshops and lectures both nationally and abroad.

ALEX: We were both fairly nervous about the new positions that were a departure from the traditional field of architecture, but we started to see how we could adapt the techniques we had learned in architecture and apply them towards these new roles.

Alex: After about two years in New York, the studio director at Enclos asked me if Audrey would be interested in heading the new interior division that Enclos was starting. So, after a couple of weeks, Audrey and I began working at the same studio yet again.
After three years in New York, we were enjoying our positions at Enclos, but knew that NYC was not where we were going to put down roots. I reached out to Studio NYL in Boulder to see if I could potentially join their facade group. We are happy to say we have relocated to Boulder from Brooklyn. I am now working at the Skins Group at Studio NYL and Audrey has gone full time with StudioTJOA, working with a number of firms in the area helping with visualization, parametric modeling and fabrication coordination.

BM: *Alex, you are currently working for a structural engineering firm. What does a typical day at work look like for you?*

Alex: Studio NYL is first and foremost a structural engineering firm, but in the last three years they have been very successful in developing a facade group that specializes in advanced building enclosures. The type of work runs the gamut from waterproofing details in both opaque and vision assemblies, structural sizing of mullions, glass to thermal modeling, and hydrothermal analysis for wall assemblies. So any typical day could see a variety of different projects with varying requirements.

NYL has given me the reins to really use my skills in parametric modeling in both the Skins Group and the structural side of things, helping the engineers derive and optimize their models for analysis. Additionally, some clients really enjoy seeing the hand sketching for their building enclosure systems, so it seems lately I have been utilizing hand drawings in tandem with 3D models and renderings to convey the ideas to the architects.

BM: *Alex, where do you find overlaps between architecture and engineering?*

Alex: In the four years that I have worked in the facade industry, I have found that architecture and engineering are integral and should not be separate. Even at Enclos, when we were developing curtain wall systems or other more atypical facades, we were in constant conversation with engineers to determine things like max deflections of the mullion or how far the glass lites could be out of plane in a cold bent glazing system. Project delivery methods such as the design-bid-build are starting to go by the wayside and are being replaced with design-build and design assist, or the rare but appropriate Integrated Project Delivery. I am a huge proponent of Design Assist as I have been on both sides (contractor and consultant). During this process the whole project team works through the build-ability of the project. This speeds up the process and tends to reduce change orders in the field because many items, which may have arisen later, were brought up in the coordination meetings.

BM: *Audrey, how did your background in industrial design prepare you to work for Enclos ?*

Audrey: In many ways, I feel that industrial design leads the way in terms of material and fabrication innovations. It can inform architecture and certainly construction. The discipline is not very theoretical, but often operates in our physical reality while focusing on constructability. Especially with complex projects that have components that are not 'off the rack', industrial design often informed my ideas on fabrication and installation. Enclos understands this and has architects and industrial designers in all their studios.

BM: *You have co-founded the firm "TJOA" – what is the goal of your practice?*

Audrey: StudioTJOA is meant to be flexible. As our meandering path through the design fields have shown, we enjoy the freedom to explore any idea. Our goal is to adapt our skills to any particular problem we are trying to solve.

BM: *In pursuing projects as TJOA, what is your typical design process?*

Audrey: When we approach an idea, we tend to front load the experiment with construction, feasibility, and materiality. Our designs and our process is heavily influenced by these factors and we try to let the physical environment, the constraints of the project, and the material help guide us through the development. The constructability and the manner of construction aids in the development and definition of the form and structure.

BM: *What advice do you have for emerging young professionals in regards to pursuing non-traditional career paths?*

Alex and Audrey: DO WHAT YOU LOVE!!!

Thanks Alex and Audrey!

The Honeycomb Gardening System by StudioTJOA

Facade study for mixed-use residential building by StudioTJOA

AIA's Young Architects Forum
YAF's official website
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A knowledge resource for awards, announcements, podcasts, blogs, YAF Connection and other valuable YAF legacy content ... this resource has it all!
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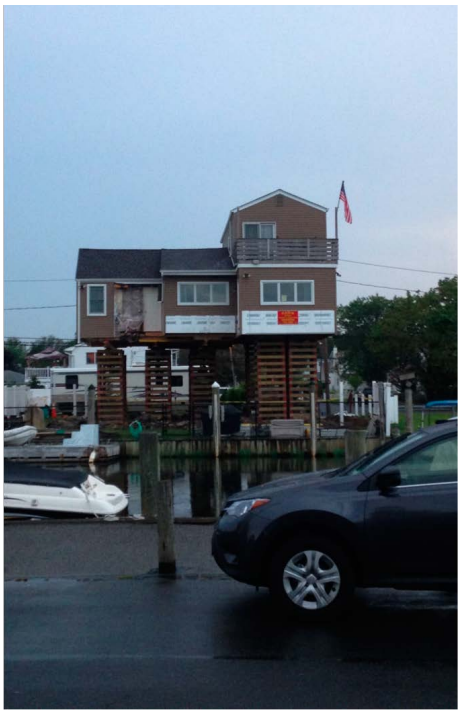
A MILE WIDE AND A MILE DEEP: RESILIENCE^3

DEFINING THE BIG "R" AND LITTLE "r" OF RESILIENCE

Maybe you are one of the many who are already fatigued by hearing the word resilience everywhere and almost contained in every other sentence these days. It is the word of the moment, but is it a trend or an imperative for Architects? I will let you decide. To help you make a decision there are a few pieces of information I will outline to assist in your final assessment. At the time of this writing there are massive floods in Texas, major multi-year drought in California, multiple earthquakes in Nepal displacing some 8.2 million people, heat waves in India claiming thousands of lives, several hurricanes in the Philippines and down into Australia, tornadoes running through Nebraska, Kansas, Oklahoma, Texas and all the way to the Gulf coast. Hurricane season just kicked off June 1. We are in for another staggering year of worldwide disasters. Still tired of hearing about resilience?

In short, I believe that the imperative of the 21st-century is responding to these new realities and that disaster response, preparation, mitigation and innovation are the underpinning of the the work we have ahead. We as architects are well suited to take leadership roles around the world to better prepare for our common future. This future cuts across all borders, political ideologies and cultures. Disasters align directly with geographies and a global attitude recognizing that "we are in this together". That very sentiment of a shared future and a shared responsibility constitutes the first layer or resilience with the big "R".

To make the case for resilience and give you a better understanding of what resilience is, I will further outline the big R and little r of resilience to give you the mile wide AND mile deep view and give

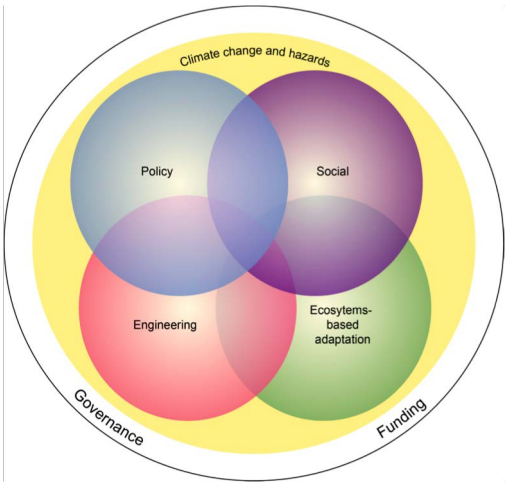


Above: Breezy Point, Queens New York, Post Hurricane Sandy. Widespread devastation seen here, the community is struggling with rebuilding to high standards to achieve resilience 3 years later. Image credit Illya Azaroff
Right: A house lift. Check out a video here of a typical lift in action.
Opposite: The four values. Image credit ACCN.

substance to resilience that in-turn become the architect's material for practice and innovation.

The distinction that I will make is that the big R - Resilience has a global perspective. It looks at the interconnectivity and complexities that are at play in almost every aspect of our lives and frames what networked, disaster durability looks like. Little r - resilience encompasses the real instances where people can make an impact that can resonate into the larger scale resilient frameworks. At both scales, and all incremental scales in between, 4 values below are at play: Policy, Social, Engineering, and Ecosystem. Those frameworks define robust networks and layered back up systems for buildings, blocks, communities and beyond.

Our global perspective or parameters of the big R of resilience are rooted in recognizing the needs we all have or can we say the issues at hand?



Our collective future, whether it's the near future of 2030 or further out to 2050 or 2100, we can identify some common trends that build a picture of a common future in need of action. Some of the elements that paint that future include population growth, rapid urbanization and climate change. Examining these elements tell us rather quickly that we are currently experiencing acute stress on already fragile systems throughout the world. Specific issues at hand include projections that by 2050, seven out of every ten people worldwide will live in cities, while we are expecting one billion new people planet wide. Those one billion new people will require one trillion cubic meters of water for food production alone to live when there are already one billion people without access to clean water today. Couple those two issues with climate change and sea level rise that puts coastal populations, infrastructure, economies and society at risk, we see the need for global resilience measures quite quickly.

Historically, disasters and people in harms way is not uncommon. Over the past thirty years, the world has lost 2.5 million people to natural disasters and cost over 4 trillion dollars. Traditionally 97% of all disaster casualties have been in third world countries. But that trend is changing given recent events such as the Tohoku Earthquake and Tsunami in Japan 2011. It has a running cost of 230+ million dollars in rebuilding and hundreds of thousands of people still in temporary housing 4 years after the event. In 2012, Hurricane Sandy hit several Caribbean countries and 13 US states. Between them, it affected 600,000 buildings, displaced millions and have costs that continue to skyrocket.

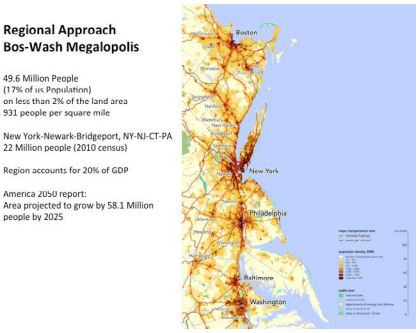
The cascading effect of disasters takes shape in many ways. Displaced populations or refugees, whether from climate or civil strife, are an indicator of these rising issues. By 2050, we are looking at an estimated 200+ million people displaced annually by natural and man-made disasters, along with an incredible projected cost of rebuilding to the world economy.

By 2100 there will be an estimated 550 million people displaced by natural and man-made disaster. By comparison, that would be the fourth largest country in the world by population. The cost of rebuilding exceeds 200 trillion dollars at that point.

What is the international political policy for displaced cultures and refugee? How do you account for the loss of language, art, history, culture of a people completely displaced? What is that policy in the future for those who will no longer have a country? These issues are part of resilience with the big R; the depth of culture and how we rely on that as part of our system is quite important.

Globally, all cities located in coastal areas are threatened by sea level rise, planning, the global economy, global transportation, global finance and in some cases culture and identity. We are talking about large-scale global change in a very short period. Island nations, such as the Maldives and Tuvalu, will surrender completely to the seas. Culture language, history, art, and people must somehow survive. Through architecture and planning these systems can become disaster durable, can't they?

Much of the man-made disasters stem from competition within already fragile systems such as food delivery networks. Scarcity of resources, such as clean water, is a trigger for ripple effects that spill across borders. Today over 1 billion people lack clean drinking water. With future population growth, that number is projected to increase causing disease, war and famine. Water is a key element worldwide and responds to financial, social and economic needs. All of these pieces are part of the R-resilience network that architects can impact in a positive manner. Physical structure of the world and fragility of our cities is more along the lines of sea level rise and climate change. However, the paradigm we have known for the past century is rapidly changing and the impact on communities, land use patterns, transportation and infrastructure are all being stressed. The Rockefeller Foundation and the 100 Resilient Cities program directly address these specific stresses, city by city. Architects engaged at the policy and community level can have an impact here as well.

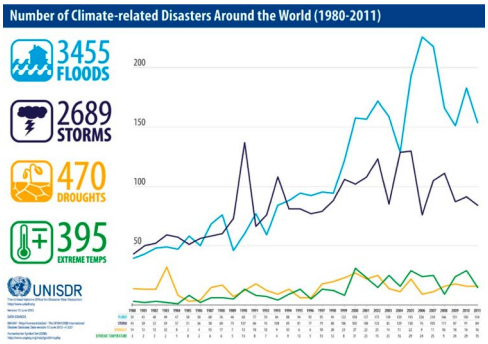


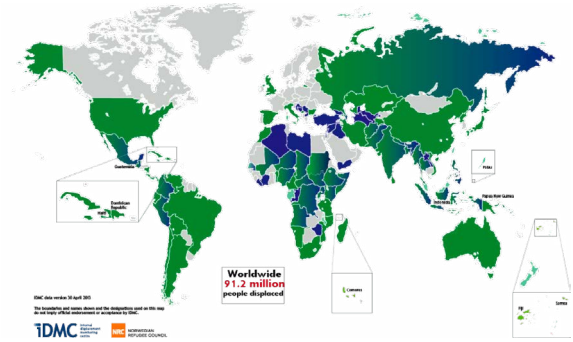
For example, by 2030 Norfolk, Virginia will experience sea level rise that will impact the majority of the city's land area, including the wealthiest neighborhoods and commercial districts. Since it is one of the 100 Resilient Cities knowledge, sharing and planning is already underway to address the new realities. But the question is, will there be enough time to adapt?

In the Northeast, the Boston to Washington megalopolis, we will experience sea level rise and an increase in precipitation intensity and frequency in the near future. We also expect extreme heat and extreme cold to play into our collective future. By 2050, New York will expect 45 days of 90+ degree weather every year compared to current predictions of 17. The region accounts for 20% of GDP relying on a complex and fragile system. The work needed to reinforce the systems in place and adapt to climate change for the growing population can be done by architects.

Above: Illya Azaroff (right) with Onagawa engineer Takuro Kurushima, Construction Technology Institute (CTI) Engineering Co., Ltd., and former Director of Onagawa Reconstruction Office. They are standing in front of one of the remaining overturned structures that will bemade into memorials to the devastation. Japan June 2014. Image credit Shingo
Right Above: Temporary housing, Sendai Japan. Over 230,000 people are still living in temporary housing such as these four years after the great Tohoku Earthquake. Image credit Illya Azaroff
Right Below: temporary Housing Onagawa design by Shigeru Ban. The world's top architects are getting involved in resilience and relief efforts. Image credit Illya Azaroff
Left: Twenty percent of the Nations GDP is in this very small, very vulnerable land area.


3





Simultaneously in the American West, there will be a greater increase of flooding and tornadoes. In the Pacific Rim, there will be the same swings with more heat waves and more hurricanes (typhoons), more, more, more.....

Just think about the elements that make a successful community and most likely those elements are at risk whether it's social, economic, delivery systems, power, water resources; all of those things become at risk with rapid change. These risks alter settlement patterns, land use patterns, price of the property, and the community itself. When the foundation of so many places become at-risk scenarios, then further stress is transferred to other systems in place.

The good news is that there are great examples that are active in mitigation and adaptation practices around the world. Cities such as Hamburg, Germany have looked very far into the future and built to a higher standard. The Japanese are masters of rebuilding. There are best practices that serve as knowledge sharing and resilience is now in the vocabulary of a growing number of architects.

Well intentioned measures with severe social and cultural consequences often occur.
Traditionally the world prepares for the next disaster based on the last disaster instead of science modeling. Then there is political climate change denial in the US that makes recognizing the fundamental issues difficult. Yes, folks we are really far behind when compared to our contemporaries across seas. We will save that comparative analysis for another day.

Here's the good news. We can make a difference. According to UN Habitat, by 2030 the World cities will build and/or retrofit 900 billion square feet, or 3.5 times the entire building stock of the US. And the opportunity for change lies ahead.

Little r-resilience, the implementable, experimental and innovative practice, is embedded within the culture of the US and architects worldwide. The natural inclination of architects, whether it's our creed, health safety and welfare, or the AIA code of ethics which clearly states that we are ethically bound to assist after disasters, puts us in a unique position. We are as valuable, if not more so, than organizations such as Doctors Without Borders, the Red Cross and and other relief agencies that work to mediate relief. Our charge for this effort can be seen in the little r-resilience first and foremost. Every architect has an understanding of how to approach resilience networks and therefore can advise clients friends and neighbors far and wide to begin to build that network in the physical, social and cultural circles.

The citizen architect can lead in the formation of new policies, codes and zoning. Our network of responsible colleagues throughout the world, along with Allied professionals that understand their role and how those roles intertwine in a network for executing resilience, is growing quite rapidly.

US policy is shifting to answer the challenges of climate change and resilience. Federal agencies now include modeling and forecasting for future challenges through scientific data, and there is a change underway that recognizes crosscutting all aspects of governance, design and implementation as the way forward.

The little r-resilience is where architects have the greatest impact through whole Community design efforts, participating in code and policy changes and of course the building designs themselves. Programs such as Fortify for housing and documents from the FLASH, the Federal Alliance for Safe Housing, provide easy access to information for architects and builders to make disaster durable housing through best practices, material choices and assembly methods. FEMA provides a wealth of technical bulletins and essential documents such as the coastal construction manual and the MAT reports for architects to design and detail buildings to be risk averse. Being aware of programs such as the CRS, Community Rating Systems, that incentivize community buy-in to whole community Resilient design put the architect in the position of community advocate.

Redundant systems and layers of systems are distinct characteristics of resilient design practice. Resilience embraces passive design practices and passive survivability as a key component to building capacity. Intelligently distributed MicroGrids, island-able power, and seeing each building as a complete, closed loop system are as much part of Resilient design practice as they are as sustainable design practice.

Learning from the earth and learning from the third world is as much about innovation as is technological breakthroughs. In Nepal, the second most water wealthy country in the world, yet the 9th most at risk to earthquakes, the plumbing for buildings is done with flexible piping. A standard building requirement that allowed for the clean water supply to remain in tact and safe after the most recent series of devastating earthquakes. What else can we learn from those who experience disasters more often?

Awareness and knowledge are our greatest tools and active leadership by architects are the best tactical approach to a Resilient future. By embracing the little r-resilience you and your clients will contribute to the larger network of world wide R-resilience. By reading this and other articles here, my hope is at many of are now ready to jump into the role of leadership to take on the imperative of the 21st century. ■

Opposite Page, Far Left: Disaster on the Rise.
Opposite Page, Left: Snapshot of 2012 worldwide displacement by +lab Architects PLLC. By 2100 there will be an estimated 550 million people displaced anyway from natural and man-made disaster that will be the fourth largest country in the world by population. The cost of rebuilding exceeds 200 trillion dollars at that point.
Above Right, Top: Reconstruction in Katmandu, Do-Tank out of New Orleans working on the ground with women-LEAD of Nepal to rebuild in a resilient manner by empowering women leaders. Image credit Matel
Above Right: What can we learn from the third world when building for resilience? Pictured here is a Nippa Hut from the Philippines, built to respond to tides and regional weather events for 100s of years. Credit Austin Reed

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THE DELTA APPROACH

The World Economic Forums's (WEF) *Global Risks Perception* surveys showcase again and again that future risks (climate change, water crises, biodiversity loss and ecosystem collapse, extreme weather events, natural catastrophes, man made environmental catastrophes, etc) are increasing in frequency and impact. At the same time these risks show a clear and strong interdependency on a regional, most often urban scale. Although this increases the complexity and impact of risk, this is also the scale where we, mankind, can adapt in order to mitigate. This is where we can and must act.

This year's WEF report listed water crises as the number one risk. Two billion people will be devastated by 2050[1] and four billion by 2080[2] if we continue with our current practices. Of all worldwide disasters, 90% is water-related[3]. Global urbanization gives us growth, prosperity, emancipation, and development opportunities, but climate change, sea level rise and increasing risks put a lot of pressure on our cities, societies and citizens, and on our economy and ecology. If we don't act, the system will collapse and we will all be victims of our own failure and missed opportunity.

Water is at the heart of this uncertain future, as stated in the facts above. It is through water that we feel the impact of climate change the most[4]. Water is essential for our economy, our social and cultural well being. Water quality defines our economic and societal prosperity and water risks - too much or too little - define our societies' vulnerability. Water is an urban matter; an asset if right, a severe risk if not. While urbanization has an emancipatory capacity, i.e. women work and kids learn, it is the collective water issues that put urbanizing places at higher risk and thus stressing the emancipatory curve. Water connects economy and ecology. On the urban regional scale, we can adapt and mitigate, thus strengthening our cities and communities worldwide. But how will we get to such an approach?

The Model

The Delta Approach is built on four fundaments:

1. Comprehensive & Implementable
2. Institutional Capacity
3. Funding / ¥€$
4. Collaboration

These fundaments are all connected and dependent; one without the other will cause the model to fail. Assessing a region's needs along these four principals will clarify what is needed and how the Delta Approach can add value.

How it works

A good example is the Dutch Delta Program. All four fundaments are addressed and have been used to full capacity: programmatic and implementable projects (or strategies leading towards implementation); institutional capacity across all sectors and layers of government (assessed by the OECD and scored an 8+), across institutional partners, businesses and research organizations; funding in place (first until 2028, then until 2050 after parliament intervention); collaborative from the start, where a real connection with local communities and the Dutch citizens is in place, when the proposed programs, projects and processes move towards implementation and thus the local impact will become more apparent.

Another good example is the Rebuild by Design (RBD) program, which was developed in the aftermath of Hurricane Sandy. Between the two programs, four differences and connections stand out:

1. Comprehensive & Implementable: RBD focused on innovative projects out of a regional research and regional strategy, through a truly inclusive, collaborative and design driven process. These projects are supposed to inspire and kick start replication across the region. There is no full-scale program of projects like with the Dutch Delta Program (DP). The DP is not as focused on innovation or a local process with responsibilities transferred to that local level; the DP is and will be a collective responsibility where the National Government reports to Parliament.
2. Institutional Capacity: The political and governmental fragmentation in the US, specifically the NY/NJ region, is not comparable to the high level of institutional capacity in the Netherlands. Therefore RBD focused on building institutional capacity both across and within all layers of government (through training, replication, changing policies, regulatory and spending frameworks, clinging CBA's, etc) and within communities, community organizations, and support groups (activists like Occupy Sandy and institutional groups like the Regional Plan Association, NY University, Municipal Arts Society and others).
3. Funding / ¥€$: The US Congress appropriated $60 billion for the rebuilding, of which $15 billion was Recovery funding through Community Block Grants. Through RBD, it was possible to allocate almost $2 billion for innovation in the Sandy affected region and 67 places across the US. There was no government (no Federal, State or local) funding for the process. Instead over $4 million dollars was raised through philanthropic organizations (i.e The Rockefeller Foundation). This is in contrast with the DP where both the process and the implementation are predominantly publicly funded.

> *It is through water that we feel the impact of climate change the most. Water is essential for our economy, our social and cultural well being. Water quality defines our economic and societal prosperity and water risks - too much or too little - define our societies' vulnerability.*

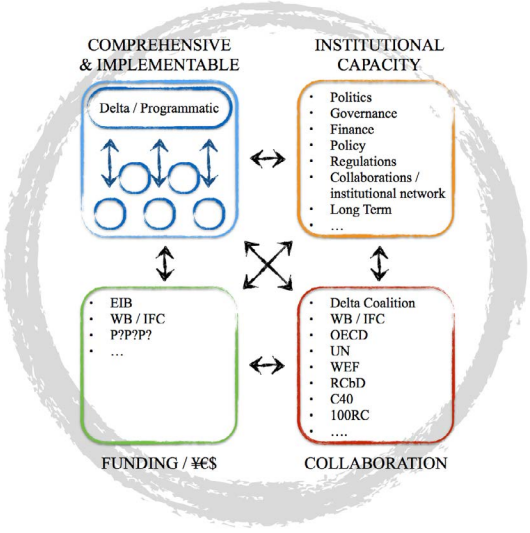
4. Collaboration: RBD was grounded in the understanding that real change starts in the heart. Building coalitions and developing projects that together can have a real impact, and real transformative capacity was the objective. Because of that understanding and that ambition, RBD started outreach and research by matching global and local talent. This resulted in a cross collaborative process that engaged over 500 organizations across the region, more that 3,500 people from governments, academia, businesses, investors, communities, activists and more. The process was open and built on trust, inclusiveness and participation, aimed at innovation and a cultural change.

Taking these four points, the process of RBD can become a model for applying the Dutch Approach across the world. The United Nations International Strategy for Disaster Reduction (UNISDR) acknowledged the RBD approach and the capacity it brought to the City of Hoboken by designating it as a Role Model City of the Making Cities Resilient campagin.

What to strengthen?

1. Innovation: innovative approaches like RBD can be replicated in the places we are engaging in, through the international networks, institutional and informal, through UN and UNR!SE, through the newly started Delta Coalition, and through the collaboration with the Worldbank (innovation track).
2. Water Diplomacy and Capacity Building: While the focus often lies on the technical and financial aspects and implications, this is the base for success. Without this capacity, every project, every investment will fail due to interdependencies on a larger scale in space and time.
3. PPP, private buy-in, (better) accountability, and transparency mechanisms: Benefit Cost Analysis, Monitoring and Evaluation instruments are critical, but often are different, have no comparables, and lack the capacity to capture comprehensive long term integrated resilience approaches. We need better instruments to increase transparency and the possibility for being accountable, key for both public and private stakeholders. Through transparency along the process, from development to implementation and replication it is possible to improve, change and deliver. To engage the private sector: BCA's can showcase the risk, but the benefits and the return on investments are needed to convince investors to step in. Monitoring ensures that all partners can guide the process and their own contributions. Evaluations make it indeed possible if rightly done and positioned, to loop back in to institutional mismatches and increase capacity, perform change and thus deliver better results. We have to share the knowledge built up over the years to ensure that there is a better common understanding on how accountability can be strengthened both in public as well private environments through - the development of - better models and instruments.
4. Outreach, inclusiveness, local understanding and locally based processes: An enabling society is emerging. That also means that governments across the world are at the beginning of a new chapter. It is necessary so inclusiveness and collaborative approach is to be learned by them, and its principles, key issues and dynamics still have to be understood much better. Learning by doing, making mistakes and learning faster are key. At the same time we should enable ourselves better to improve faster by collaborating with those partners that can speed up our learning.

The Delta Approach builds on a long tradition of aligned planning and water safety, founded in the Netherlands' history and culture of living, working and building with water. Now, with water as the world's number one risk, we have to inspire the world, collaborate across our institutions and explore new paths outside of the current ones. We must focus our collective efforts on better impact and true innovation, inclusive and collaborative for resilient communities across the globe. ■



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[1]World Water Development Report 2012
[2]UNDP: Human Development Report, 2007/2008
[3]World Water Development Report 2012
[4]World Water Development Report 2012

Henk Ovink
is the first Special Envoy for International Water Affairs for the Kingdom of the Netherlands. Ovink is Principal of 'Rebuild by Design' and was Senior Advisor to the former US Presidential Hurricane Sandy Rebuilding Task. He was both Acting Director General of Spatial Planning and Water Affairs and Director National Spatial Planning for the Netherlands. Ovink is member of the International Advisory Board for the City of Rotterdam.

OPERATION RESILIENT LONG ISLAND [ORLI]

A CONVERSATION WITH CO-CHAIR DAN HORN

Resilience is the theme of our June issue and we specifically are interested in how emerging professionals are poised to be at the leading edge of the movement. A number of recent disasters, like Superstorm Sandy, Hurricane Katrina, the Japan Tsunami, and others, have hit more frequently and seemingly with more intensity. As we look for ways for architects to help lead the charge, YAF Connection *Editor in Chief, Jeff Pastva, caught up with an enterprising recent graduate who is helping to shape the conversation. His name is Daniel Horn, a graduate of NYIT (New York Institute of Technology) and current employee for Perez Architecture in Brooklyn. For more info on his work, check out the video HERE.*

JP: How did you first get involved in resilient design?

DH: Superstorm Sandy personally affected me back in 2012. At the time, I was in my final year at NYIT (New York Institute of Technology). My home, in Lindenhurst, NY, was flooded by the storm. We were lucky because our first floor didn't really get hit because we weren't directly on the coast. But we were out of our homes for a while. We were not prepared for Sandy and did not evacuate as we were told to. If you are familiar with Hurricane Irene in 2011, that storm was also in the media as well, but didn't amount to much. When Sandy hit the year after, we didn't think much of it. So we stayed, but to our dismay, Sandy really damaged a lot of our personal belongings and homes. I know a few people who are still out of their homes today. When classes resumed at NYIT three weeks later, it changed the direction of my thesis project. I was already doing research on temporary housing, but it changed to a resilient typology. I implemented storm surge mitigation techniques on the post-industrial sites I was working on to create safe havens for the community. I also wanted the building to act as a wave attenuation to help the adjacent community.

JP: This event affected your trajectory in school. How did you learn about ways to mitigate? Was the studio a way to experiment or did you have to do independent research in order to proceed?

DH: The first half of fall semester was research based. When Sandy happened, I switched my focus because it was more meaningful to me. My professor also encouraged this route because I had personal backing behind it. In my research, I looked at flood mitigation techniques, FEMA codes, building codes and places that were affected by water damaging events. As I was continuing my studies, I took it a step further and tried to organize ourselves as students. An entire group of students, my co-chair Alex Alaimo, and I went out to the devastated areas in Long Beach and some areas of New Jersey. We did a lot of research, including diagramming techniques and data models from National Geographic. Eventually we decided we wanted to form a group. We became known as Operation Resilient Long Island or ORLI. Our mission was to develop strategies to help local residents rebuild resiliently. One of our first initiatives was to have an informational pamphlet. We took all the confusing information that FEMA was giving out, collected info from local Non-profits and put it into one source of information. We got a lot of positive comments because a lot of people didn't know what to do. They didn't know what base flood elevation was, what design flood elevation was. Nor did they know historically how other storms happened or that more could potentially happen in the future because of climate change.

After our initial kickoff, we held a design competition called the 3C (Comprehensive Coastal Communities) Competition. We initially had interest from 300 teams. Of that we ended up with 60 entries from 20 different countries. We put together a jury to get a 1st, 2nd, and 3rd place winner as well as 32 finalists, which were put into a publication called the 3C playbook. The first place winner was a team from Northeastern University in Boston. Their team was called Mixed Paper and their design was called Adaptive Urban Habitats. The proposal looked all the way ahead to the year 2300, which is what we wanted to see. The final design was a residential community typology that could be built above the Red Hook houses in Brooklyn. Our second place winner looked at the community of Canarsie and the vernacular semi-detached homes. They discovered that when severely damaged, the houses could be added on to or subtracted from. They looked at a prefab unit that could be built onto the damaged home. As portions of the damaged home were removed, new portions of the prefab home were built. In the end, the new prefab units could become a new house itself. The third place winner really thought outside the box and looked at a residential zone above a public zone. The public zone in this case was the Rockaway boardwalk in Southern Queens. So they really looked at the public private connection and how resilience can be implemented as the buffer zone between the two. After we had the competition, we had an event called TED^{x}NYIT: Meta Resiliency, where we brought in other professionals from the built environment.

Moving forward, ORLI has three Co-Chairs: Alex Alaimo, Austin Reed and me. Austin is in the Philippines organizing a response to a last year's typhoon. We are in the process of proposing solutions to the local government. The actual location is on an island called Siargao. We are using the typology of a skate park, because a lot of kids do it there. All the locals engage with that activity,

especially the young people. We are looking at how a skate park, built into the ground like a berm could shield the adjacent community from storm surge, typhoon, tsunami, monsoons or other rain events. We are currently assisting him as much as we can from NY.

JP: You mentioned the year 2300 for the first place winner of the 3C competition. Is there significance to that number? How do you actually project that far into the future? What data are you using?

DH: One of the diagrams the team showed was a series of maps of what the coastline would look like in 2050, 2075, 2100. They were all based on sea level rise projections from the National Weather Service. We don't know exactly how accurate that will be, but evidence shows there has been a measured increase in sea level, +/- 8", within the last 50 years.

JP: How do you get the public to think farther than 5, 10, 15 years down the road?

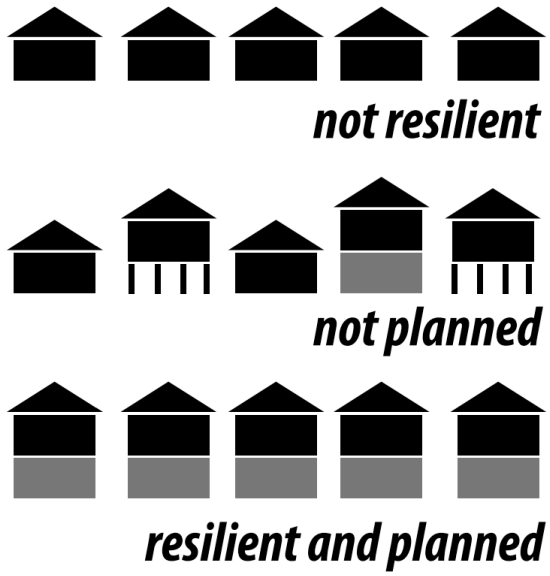
DH: Many of the locals don't necessarily care about things that far into the future, but in order to get them engaged we show how it would affect their daily life and the lives of their future generations. Another key piece of info that we put into the informational pamphlet is how elevating one's home above the Base Flood Elevation (BSE) drastically lowers flood insurance premiums per year. For example, if a home is below the flood plain and the owner doesn't do anything about it, their premiums (which are required by NY State law) will be about $10-15K a year. That is an unimaginable amount of money for some of the lower income communities along the coast. But if they raise their home to the Design Flood Elevation (DFE) or higher, their premiums would be closer to $400 a year. When we showed how the money adds up to them diagrammatically, they reacted positively.

JP: Can you expand on the terms; Base Flood Elevation, Design Flood Elevation?

DH: Base flood elevation is a horizontal line above grade, which is the flood predicted height for a given year. If you are in flood zone AE, for example, and your flood height is "AE 10", it means your base flood elevation is 10 feet above sea level. So if the grade outside a home is 5 and the base flood is 10, a house would need to be 5 feet above grade to meet the BFE. For NY State, there is also something called 2' freeboard elevation, which is 2 feet above the BFE. For the same property, which has a lowest adjacent grade of 5, the DFE would be 7' above grade. That dictates where the first floor may now begin.

JP: How are Long Island and the areas in the tri-state area that are prone to flooding, similar or different from other areas within the country and around the world? What other places can you look at best practices and apply it to what you're doing?

DH: NOLA is primarily marshlands, flat, and most of the city is below sea level. That alone makes it unique and susceptible to flooding with any rain event, not just hurricanes. The Army Core of Engineers are investigating ways to essentially build a shell around the city. In NY, there are a lot of different community types and topographies. Most of the areas along the coast are lower income and very dense. Lower Manhattan is infill that has been built up over the decades. Comparing the two is difficult.



Above: Resilient planning diagram. Image courtesy of ORLI.

JP: What are the 5 Building Blocks of resilience as you outlined in your Mind the Gap presentation?

DH: New Foundations, A Raised Entrance, Vertical Access, Usable Underside and the Public Connection. The first four deal with an existing structure and the requirements necessary to elevate it. For example, if you are totally enclosing the ground floor, you need flood venting that equates to roughly a square inch for each square foot of enclosed space. This allows hydrostatic pressure to dissipate and not damage the foundation wall. The new foundations can be concrete, or located on piles (wood or helical), and can vary in spacing. Some of the home are small and don't require a lot of columns to hold it up.

Once we create a new foundation, we look at vertical access. How are you now accessing the new floor? Some homes are very close to the DFE – so they only need to be raised a foot or two. Some homes that are close to the ocean need to go up ten feet from where they currently are. The latter are the issues we were seeing in Long Beach. We were faced with deciding what materials to use for the stairs, how we were getting up to the first floor, and if it has to be ADA accessible. If the property is really small, it is hard to get a 1:12 ramp within the property line that goes up 12 feet. For the 3C competition, we asked participants to look at the stair.

From there we looked at raised entrance, which is not just the stair, but the entryway into the home. Many of these homes in the Rockaways and Long Beach had front porches. When the house was elevated, most had to be knocked down and rebuilt or knocked down and not put back. It is hard to retain a porch when you are elevating.

From there we looked at the issue of usable underside. Once the home is put back down on the foundation, there is a new space beneath the home. By FEMA guidelines, it can't be occupiable or habitable. You can't put a bedroom down there. You can't even put utilities down there, including boiler, furnance, electrical panel, washer/dryer, because they need to be above the floodplain.

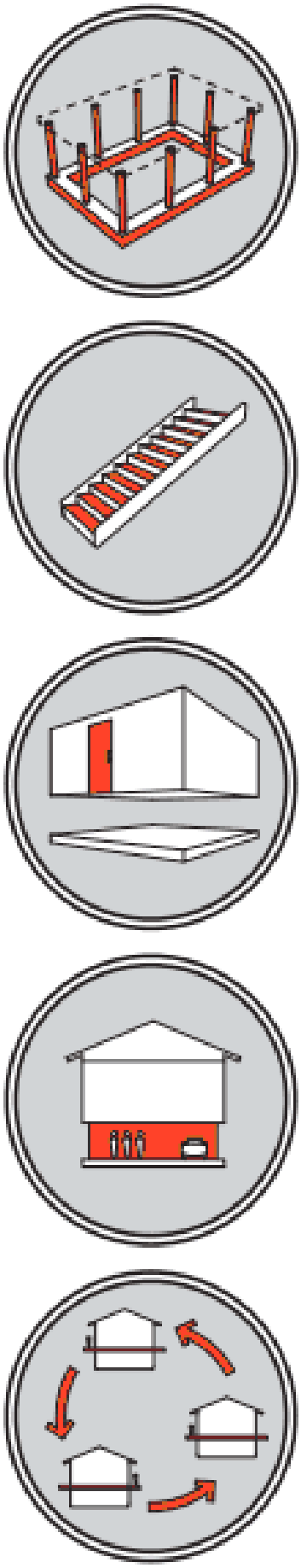
For usable underside, we looked at the public connection or the elevated sidewalks. We looked at every other home as if they were built to code and were resilient. We explored how they talked to one another in order to create a new neighborhood. We tried to implement the community character that these coastal towns once had. With the 5 points, we tried to create something similar to Corb's 5 points. They are a compact, simple list that is a beginning to help people start thinking about the different components that go into an elevated, resilient typology.

JP: There was a resilient design studio that started around the same time you were at NYIT. Has that continued? Are you still seeing NYIT and other curriculums that have picked up resiliency as an elective course? Are you being instructed on how to design for these events in studio?

DH: At NYIT, ORLI help organize a resiliency design charrette. We had a site in Long Beach along one of the devastated areas and prompted students to choose a multi-unit home. We asked them to look at how you either get rid of the existing damaged property and rebuild new or use the same structure and either elevate it or make it more resilient. Since I've graduated, I don't think NYIT has done any more workshops like that. It was only one project for one studio. Pratt was organizing a lot of resiliency studios. They actually had a sister group to ORLI called the PDRN – the Pratt Disaster Resilience Network. They didn't start a competition, but did other outreach items. They actually did more than ORLI did, which was great. We connected and tried to work together. We invited them to one of our events called, Raise or Stay, in Columbus Circle. We brought a number of local non-profits together to see how people were reacting to boots on the ground in these devastated areas.

JP: How do you plan for future growth to be cohesive with existing housing stock?

DH: If homes have been more than 50% substantially damaged, compared to pre-storm structure value, it is mandated to be elevated above the Base Flood Elevation. It is pretty much law. If they don't act, their insurance premiums will skyrocket. People will either have to pay that per year or leave a vacant house. All new construction needs to be built to DFE. However, there is a disconnect we are seeing between typology and aesthetics. In Long Beach for example, there are three story homes being built on 50x100' lots (which are pretty small). The existing bungalows are just one story and are way below the BFE. ORLI tried to go to local planning departments and lobby for new zoning amendments to address this. They actually eliminated the max height limitation because some of the taller homes needed to be elevated above that line. ■



Above: A house lift on Long Island. Image courtesy Daniel Horn.
Above left: 5 building blocks of resilient reconstruction. Image courtesy of ORLI.

Daniel Horn, Assoc. AIA
serves as co-chair of Operation Resilient Long Island (ORLI), a grassroots committee of young designers founded to explore methods to aid coastal communities rebuild for the future. He currently works in New York City for Perez Architecture, a design firm whose primary focus is resilient reconstruction after natural disasters.

ROADMAP FOR RESILIENCE

BUILDING RESILIENCE THROUGH DESIGN POLICY

As one of the 33 inaugural cities in the Rockefeller Foundation's 100 Resilient Cities (100RC) initiative, the city of Los Angeles is undertaking the ambitious goal of creating and implementing a resilient city vision. With the announcement of a second 100RC cohort, the question remains: How are participating cities building resilience? Lindsay Woodson, a Harvard University Ash Center for Democratic Governance and Innovation Fellow in 2014, worked as a Seismic Safety Intern in the Office of Los Angeles' Mayor Eric Garcetti. During her time there, she found that for the city of Los Angeles seismic resilience is rooted in design and policy.

Defining Resilience

From the passage of a $7.5 billion water bond to the unprecedented groundwater legislation, the State of California is currently laying a strong foundation for resilience. For the City of Los Angeles, resilience is taking on a specific definition; One, which is fundamentally geared towards protecting lives and safeguarding California's economy. Considering the multitude of demands and complex nature of disaster response and recovery, along with the city's size and the shear number of stakeholders involved in the planning of seismic safety, retaining 100% functionality post disaster would be a near impossible feat.

With that being said, the city's preparedness efforts are aimed at mitigating known hazards, protecting high-risk critical assets, and planning for cascading effects. Each effort shields against catastrophic impacts. Public service functionality and post disaster economy are key metrics for Los Angeles' resiliency efforts.

Developing the Science

Generating resilience for a city of over 3.5 million inhabitants is a formidable task. Fortunately, Los Angeles benefitted from the expertise of Dr. Lucy Jones, a renowned seismologist with the U.S. Geological Survey, who served a one-year term as the city's appointed Science Advisor for Seismic Safety. In this capacity, Dr. Jones was tasked with developing a set of seismic safety recommendations for Mayor Eric Garcetti.

For nearly 15 years, Dr. Jones has been dedicated to distilling scientific facts into actionable applications for decision makers. In 2008, she led the development of the ShakeOut Scenario, collaborating with scientists, engineers, emergency response personnel and policy makers from California and around the nation. The ShakeOut Scenario examines the economic and societal impacts of a conceivable 7.8 magnitude earthquake along the San Andreas Fault. Detailing potential devastating effects of a large earthquake in Southern California, the scenario estimates that the proposed "Big One" could cause upwards of $210 billion in damages – a number that neither the City of Los Angeles nor the region can ignore. As the science foregrounded the negative impacts on economic viability after an earthquake, the ShakeOut Scenario became the guiding force behind Dr. Jones' seismic safety policy recommendations for the city of Los Angeles.

Translating Science into Policy

In her capacity as Science Advisor for Seismic Safety, Dr. Jones was based out of the Department of Homeland Security and Public Safety within the Office of the Mayor. There, she formed the Mayoral Seismic Safety Task Force, which provided her and her team guidance on citywide seismic resilience. Jones created smaller mission driven sub-groups, centered on specific issue areas. She and other experts worked on gathering data, identifying risks, and communicating with stakeholders to reach consensus on a set of recommendations. In December 2014, the proposed recommendations were packaged with the city's seismic resilience report and released to the public.

At its core, "Resilience by Design" is not intended as a prescriptive how-to manual, nor as Mayor Garcetti put it, "…to simply be the latest 'blue ribbon commission' report that sits on a shelf," in a press release. Rather, it establishes a framework for the city's resilience efforts and offers action items for detailing next steps towards implementation.

The report outlines the city's seismic vulnerabilities and articulates approaches to three major areas: Buildings, Water Systems, and Telecommunication Networks. Dr. Jones' team identified these critical sectors as achievable benchmarks for effective preparedness practices and efficient recovery processes. Here are the issue areas:

- **Building Stock** - Considerable life safety risks posed by earthquakes are outdated buildings and building codes. The report stresses that building codes are historically enforced to keep occupants alive after a disaster, not to sustain building functionality. In terms of resilience, functionality is a key factor, particularly with hopes of limited population loss following a disaster.

• **Water Systems** - Water infrastructure is one of the most vulnerable critical utilities for any city, especially Los Angeles. With sections of the system dating back to the early 1900s, supply aqueducts are quite vulnerable in the face of anticipated earthquake impacts.

• **Telecommunication Networks** – In today's society, cities of all sizes are dependent upon access to telecommunication devices. During the last large Southern California earthquake, the 6.7M Northridge Earthquake of 1994, the complex cellular systems utilized today were not developed. As a result, telecommunication vulnerabilities are relatively new in disaster science, yet immensely important.

Furthermore, the report signals the city's increased commitment to preparing for earthquakes. As Mayor Garcetti stated in a press conference for the report's release, "This package of action steps represents a tectonic shift of how earthquake policy is made in Los Angeles…Today, Los Angeles is addressing our greatest earthquake vulnerabilities proactively and strategically." Progress is being made. Dr. Jones' work was instrumental in securing substantial Federal funding for a statewide Earthquake Early Warning Alert System, and Los Angeles will become the first city to boast new seismic safety standards for cell phone towers.

Achieving Design Policy

In the face of unprecedented shocks and stressors, design and policy can no longer stand as mutually exclusive entities. Los Angeles' "Resilience by Design" report not only documents resilience recommendations, it outlines a process by which designers can enter in a conversation with policy-makers.

At a basic level, resilience aims to minimize the effects of disasters, both anticipated and unforeseen. Effective resilience planning negotiates architectural, community and regional scale investments, weighing social and economic considerations. Spatial implications are brought to bear at each level.

While design policy specifies an end goal, it also establishes a framework by which design-thinking informs policy-making. Resilience is a multidisciplinary and iterative process. In order to shape sustainable, just, and resilient communities, designers must come to the forefront. Policy is the vehicle for change, but design should be at the wheel.

Empowering Resilience by Design

Fundamentally, the process behind the development of Los Angeles' resilience report reveals insights on how cities can achieve longevity around resilience based policy. In particular, here are some guiding principles:

• Sustain Interest – In many city governments across the nation, gaining consensus is the foundation for change. Sustaining continued investment throughout shifting agendas and entrenched bureaucracies requires articulating a relevant political narrative for top leadership to apply.

• Include Stakeholders – Participation by local decision makers is just as important as cultivating trusted relations with city residents representing a broad spectrum of interests and backgrounds. Both are essential for responsible policy development and achievable deliverables.

• Contribute to Economic Development – As Rockefeller Foundation President Judith Rodin has noted, there is an integral and intrinsic relationship between the work of economic development and resilience. Resilience work must remain relevant to future economic goals and viable in the midst of existing economic development priorities.

• Provide Proactive Governance – Multidisciplinary efforts lay the foundation for forward-looking, proactive governance toward community and regional resilience.

Cities, especially those as politically influential as Los Angeles, cannot afford to wait for a catastrophe to implement resilience plans and policies. Embracing resilience efforts is a critical step in moving cities away from reactionary approaches to disaster. Los Angeles' efforts, under the leadership of Mayor Garcetti and Dr. Jones, highlights how risk-based science and collaborative government support can advance forward-thinking resilience driven policy. ■

Lindsay Woodson
is a concurrent degree candidate at Harvard University, Graduate School of Design. She recently finished the Master in Design Studies (MDes) program in Risk and Resilience and holds a Bachelor of Architecture (BArch) with a minor in geography from Syracuse University. Her previous research dealt with socio-ecologic impacts of disasters on disadvantaged populations in New Orleans.

THE ROAD NOT TAKEN

In Robert Frost's classic poem "The Road Not Taken", the reader is challenged to look at the choices we all face as opportunities. We are free to choose either road, but do not really know what lies ahead, nor the experiences we will pass up in life because of that choice. I think that one of the major reasons we enter the field of architecture is that we want to make a difference. True architecture is much more than sheltering humanity from the elements and should uplift the human spirit. Who knew that the choices made would ultimately take me from traditional projects to ones that tell a story, are innovative and are enjoyed by millions each year?

How one approaches a blank sheet of paper is one of the principles that guide Disney Imagineers. They know that one's attitude will go a long way in determining the outcome. It is the difference between fear and trepidation; that you "have" to make the first mark versus the joy and excitement that you "get" to make the first mark. My career as an architect is certainly one of making choices and not knowing the outcome or experience I would face.
I was educated at The University of Texas at Austin and a statement made by my last design professor should have been an indication of what road I would eventually take with my career. He said:

"Not every project you undertake will be Institutional in nature. Use some Imagination."

I felt that those were harsh words at the time but looking back, very insightful. My early career taught me the basics of what it took to be a good architect. I designed, documented and observed projects that ranged from banks, schools, car dealerships and office buildings to retirement communities and Shamu Stadium. Working on an amusement park foreshadowed future endeavors, but the economy collapsed and I was faced with relocating away from the familiar.

Working for a major hotel corporation became a more advanced classroom where I was surrounded by a team of dedicated, intelligent and hard working professionals. These hotels and resorts were designed for work, relaxation and play and became another indicator my career was going to be unconventional. After several years, a call from Walt Disney Imagineering brought me to another intersection in my career.
Imagineers are the creative force behind the iconic Disney attractions and experiences enjoyed by millions of "guests" each year. They combine classic, rich storytelling with the latest technology to breathe life into attractions, resorts and cruise ships. While everyone knows the heritage, innovation and resourcefulness of Imagineers, most do not know lengths taken to assure "guests" have the best experience possible.

Imagineers are also Visionaries. Years before the American Disabilities Act became law, many of that law's principles were first tested in the design and construction of Disney Parks and Resorts. Sustainability has a face and he is Jiminy Cricket, who has been reminding us to use an Environmentality since 1990. Regarding water: Walt Disney World and Reedy Creek Improvement District treats and recycles between 12-13 million gallons per day and returns treated water to the aquifer via rapid infiltrations basins. Electricity: one of the newest and more innovative things involves the treatment of organic wastes - the biosolids from the wastewater treatment plant, the food waste from kitchens and restaurants and the fats, oils and greases from general operations (known as FOG). These three waste products are being anaerobically digested to produce methane gas; the gas is cleaned and then combusted in stationary internal combustion engines to generate electricity. The waste heat from the engines is used for heating the digesters, and to power a thermal dryer, that will dewater the anaerobically digested material to produce a fertilizer pellet type product. The pellets will be marketed as an organic fertilizer.

Walt was never satisfied with the status quo and that trait became another opportunity to take another road. Early this century, Imagineers were challenged to develop a better project delivery system that would lower construction costs and decrease durations. Working with Stanford University's Center for Integrated Facility Engineering, a new Virtual Design and Construction process was envisioned and I led, as the Director of Project Architecture and Engineering, its use in designing Expedition Everest. That process created the paradigm shift known as Building Information Modeling and was used to create what some have called the "most integrated Imagineering project".

When Walt Disney World was being conceived in Florida, one of the innovations incorporated was the development of the unique EPCOT Building Code. It is prescriptive and more stringent than model codes, assuring that facilities built within the Reedy Creek Improvement District are compliant. There was a strict enforcement

If it can be imagined, it can be believed. If it can be believed, it can be achieved!

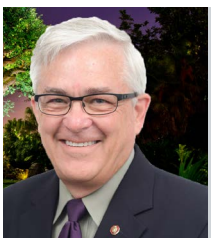
Left: Michael Lingerfelt on the job site. Image courtesy of Michael Lingerfelt, FAIA.

of the code that would be put to the test while building Expedition Everest during the 2004 Hurricane Season.

Four named hurricanes hit Florida during that season and Disney Parks and Resorts Innovation exhibited incredible resilience. EPCOT Building Code assured better than "the lowest acceptable standard" and its enforcement meant that facilities were built in accordance with its requirements. Hurricane Charley passed beside Walt Disney World forcing the Parks to close. In the history of WDW, the parks have only been closed four times (once on September 11, 2001 and during three of the 2004 hurricanes). Despite the park closures, the hotels remained operational the entire duration of the storms providing shelter, food and entertainment. The next day, the theme parks opened with minimum damage. That was not the case for the hotels across the street that were closed anywhere from two weeks to two years. If one considers the return on investment, the fact Disney hotels remained operational during the storms and the parks were opened the next day, validates an architect's involvement. We were able to create "architecture" that both uplifts the human spirit and surpasses minimum requirements of the code in an effort to provide the best service to our clients.

During your career, you will be faced with many decisions, forks in the road and challenges. As an architect, you will be afforded the opportunity to make a difference through your work. Use innovation, refuse to take the easy way out and don't say, "It can't be done." Walt Disney crystalized this when he said, "Once we step onto the final path that ascends steeply towards reality, there is no turning back. We are encouraged onward by our belief in the dream, and each other. If it can be imagined, it can be believed. If it can be believed, it can be achieved! "

Use every experience in your path to learn a new skill, try something innovative or learn from your mistakes. Never underestimate the power of going above the expectation or putting in the extra effort. Architecture has the power to enrich, and in many instances, even save lives. ■



Michael Lingerfelt, FAIA
is the Director of Project Architecture & Engineering for Walt Disney Imagineering. To date, he has built over $3.6B in hard construction. His diverse portfolio of projects includes: theme park attractions, merchandise, restaurants, schools, health care and hospitality facilities. Currently he is working as the Architect of Record for Chef Morimoto's new Asia cuisine restaurant at Disney Springs.

COMMUNITY ENGAGEMENT
FUELS RESILIENCY EFFORTS IN THE FAR ROCKAWAYS

Resiliency is not only about integrating strategies that will help mitigate storm surges, wind events, and wave impacts. It is also about building and strengthening local communities to provide them with the tools that will allow them to come together during and after a disaster.

I believe that part of the reason that the White Arkitektur/Gensler/Arup team won the FAR ROC [For a Resilient Rockaway] Competition is not just because of our proposed physical layers of defense in anticipation of future events, but also because of our strong connection with the Far Rockaway community. As a member of the team we spent a significant amount of time walking around the Far Rockaways, talking with local businesses, meeting with grassroots organizations, chatting with anyone in the streets willing to give us their opinions, and participating in two planned charrettes to help envision the future of Arverne East.

As a result, from a master planning perspective, our proposal integrated the existing city grid so the new development would not turn its back to the existing community. The housing and commercial building types were varied in both scale and type to bring in new residents and suit the needs of the current residents. We integrated communal gardens and proposed options for how city blocks could set up associations to take ownership of their shared spaces. And we incorporated programs that we understood would meet local needs, such as an education center and extended dock, so kids could physically connect with the local ecology (we heard that children often do not take advantage of their proximity to both Jamaica Bay and the Atlantic Ocean). Additionally, we densified the plan's central zone adjacent to the elevated train line to create a gathering space with some amenities in the event of another Superstorm Sandy.

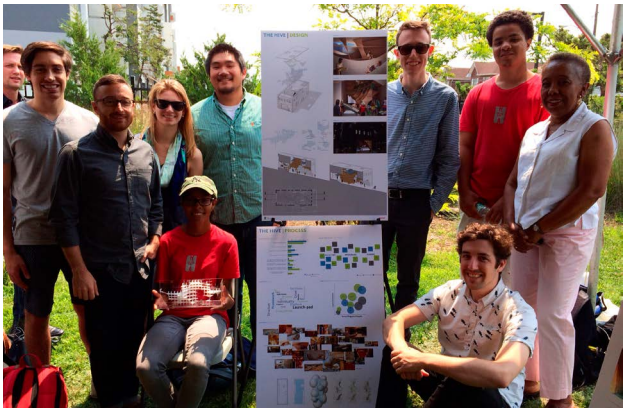
Since we won the competition, Gensler has made a concerted effort to stay involved with the community as the developers seek funding and decide how they want to move forward with planning Arverne East. Many times during the competition process we heard anxious residents mention that too often architects propose a project to them and when it does not move forward they feel forgotten. We began to strategize how we could have an impact, despite the fact the community would not see anything physical on site for years.

Summerstudio is a program that Gensler organizes each year for its summer interns in partnership with the Barnard/Columbia Design for America program (DFA). With approximately 30-40 interns per summer, Summerstudio gives them an opportunity to work together on an assigned summer-long project. This is where we saw our opportunity.

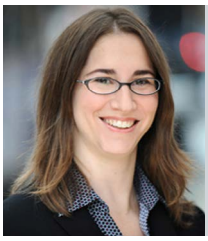
We reached out to the Rockaway Waterfront Alliance (RWA), a local non-profit organization whose mission is to foster a deeper understanding, respect, and connection between local communities and the Rockaway waterfront. The organization has a program called Shore Corps, which is an environmental leadership program for high school students in the Rockaways. Together, with Executive Director Jeanne DuPont, we crafted a program for the summer centered around a firehouse that RWA is in the process of retrofitting as a community center.

With weekly visits to the Far Rockaways, Gensler interns, DFA students, and the Shore Corps students worked together to envision future uses of the community center. We hosted charrettes for community input, ran visioning exercises for the students to think about their neighborhood and what would bring them together regularly, and created study models and proposals for the interior white box space. Since everyone was affected by Superstorm Sandy in one way or another, all were mindful that we were considering how the space would enable the community to come together, gain access to resources, and connect people with larger recovery efforts in the wake of another natural disaster. Summerstudio 2014 culminated with a party in the garden outside of the firehouse where teams presented their proposals to their families, the local community, politicians, educators, and established design and planning professionals.

It was clear to me that even though Gensler was not commissioned for a project, we had made an impact on future planning efforts. Additionally, Gensler interns and DFA students had the opportunity to mentor Shore Corps students about the profession and how architects, designers, and planners work through design problems. In turn, Shore Corps students taught Gensler interns about community engagement and resiliency. The project was so successful that this summer we are looking forward to working again with the Rockaway Waterfront Alliance and Shore Corps to help envision activating the space under the elevated train line across the street from the firehouse. Hopefully, this partnership will continue in years to come as the Far Rockaways rebounds from Superstorm Sandy and prepares for future natural disasters.■



Above, Left: FAR ROC [For a Resilient Rockaway] Proposal: The boardwalk is designed as a connector between the community and the oceanfront, as well as a measure to protect the community in the event of a natural disaster. Image courtesy of Mir.
Above, Right: FAR ROC [For a Resilient Rockaway] Proposal: Pier extending into the water. Image courtesy of Mir.
Above, Middle: FAR ROC [For a Resilient Rockaway] Proposal: Lower density housing pays homage to bungalows, which are typical to the Far Rockaway neighborhood.
Image courtesy of Mir.
Above, Top Left: Each team, comprising of Gensler interns, DFA students, and Shore Corps students, presented boards at a public event on the grounds of the community center. Image courtesy Gensler.



Jessica Sheridan, AIA LEED AP BD+C
is an architect and project manager at Gensler. She is the Community Liaison for the Summerstudio program. Additionally, Jessica is a New York Regional Representative on the AIA Strategic Council.

RESILIENCY

My name is Bob Borson and I am a licensed architect in Texas. I mostly design modern residential projects but my firm also specializes in the design of lots of other project types and styles. In fact, I'd help you pick out a front door if that's where you needed my help.

In 2009, I received the Dallas Chapter American Institute of Architects "Young Architect of the Year" award, but it was probably for volunteering to do things that others wouldn't, shouldn't of couldn't. I started my blog on January 14, 2010 to learn the technology behind how people are starting to communicate with one another. For the most part, I'm just a regular guy except I put my pants on both legs at once (it's just faster that way). I don't take myself too seriously but I have a great deal of pride and a teeny tiny competitive streak. I actually take what I do seriously but I try to find a way to have fun while I'm doing it.

"Resiliency" is a word that isn't used very often in everyday conversation. I spent the last week asking young architects and associates about "resiliency" and this is what I discovered. The first thing that happens is they get a look on their face like you just asked them to eat something you found on the ground. In an effort to help the situation along, I found that it helped to change the phrasing of the question to: "Tell me what comes to mind when you hear the word "resiliency".

This is a question that all architects can respond to, they just need some context in order to understand how to respond – and we all know that architects love context. That and the fact that architects seem to have a fairly endless stream of anecdotes about being "resilient." Architects understand resiliency; it seems to be one of the defining traits of this profession.

I learned that when you ask an architect what resiliency means to them, you should be prepared to hear this person's life story. I also learned that there was a theme that went through the most common definitions. Such as:

Resiliency: Take repeated damage and continue performing.

Resiliency: Something that can be pushed beyond its known boundaries and still function at a high level.

Resiliency: A person's ability to successfully adapt to stress and adversity.

All of the responses I received originated from a very personal place with the person with whom I was speaking. I know because every single response I received had a similar next part of the conversation. Immediately after defining the word, people related their understanding of the word to some form of adversity they had faced and overcome in their life.

Architects are Resilient.

A pattern that emerged during my social experiment with the word resiliency was that people typically associated "will" and "determination" with being resilient. As unique as architects like to think they are, I heard one story after another about the process an individual goes through on their way to becoming an architect– which is where "will" and "determination" come in to play.

Initially, architects demonstrate "will" as soon as they learn the arduous path they will be required to travel on the road to becoming a licensed architect. They have identified something they want and they believe that they are willing to put the time, energy and effort to achieve their goal – even if they don't truly understand what it means at this point.

Next, architects show "determination" because despite knowing the journey is long and demanding, they continue moving forward. There are an endless stream of opportunities passed and sacrifices to be made, all in support of the goal. The educational demands are significant, the internship period is challenging, and there is the infamous architectural licensing exam – a test that most people don't successfully complete until their early thirties.

Finally, now licensed, architects repeatedly show their resilience as one unexpected event after another challenges them and yet they continue to grow and evolve. Resiliency is a trait that is born out of adversity, but is different than will and determination. When things don't go our way, we don't just find a way to move forward, we find a way to improve. Maybe it's the Norwegian in me, but I think adversity is a good thing. Being asked to do things we don't know how to do is the path to growth and development – and as problem solvers, architects are always trying to solve problems in ways that haven't been done before.

One of the stories I frequently tell has to do with crossing the finish line. For most people, as soon as they graduate and get a job, they have achieved a major life event, i.e. crossed a finish line. For an architect's career path, this is the equivalent of the 100-meter dash, but architects are not sprinters. Graduating is simply the first lap around the track as we still have an internship period and what is widely acknowledged as the most arduous licensing process in the entire universe. As a result, that moment of collecting one's license is momentous because one has finally achieved the goal that was identified so long ago during the "will" period of becoming an architect. Everything moving forward from this point is going to test one's resilience; how one reacts to these challenges will define and shape their character.

There are few jobs that I am aware of that have as many outside influences, as many constantly evolving technologies, materials and methodologies, as the field of architecture. Within the architectural profession, architects see their role changing daily - and yet they don't see this as a sign of a system that is damaged or broken. Architects see the constantly evolving nature of their profession as one of the singularly defining characteristics that make it special and noble. The unexpected is expected and is simply part of the process and it is the architect's ability to constantly grow and evolve within the unexpected while functioning at a high level that makes them resilient.

The field of architecture is defined by the resilience of its architects. Architects are resilient – they have to be or else they wouldn't have made it this far. ■

KEEPING THE PARADISE

SIARGAO ISLAND, SURIGAO DEL NORTE, PHILIPPINES

There is a major dichotomy in the Philippines. The islands are an absolute heaven, but have deep rooted issues. Disasters, such as earthquakes, typhoons, landslides, flooding, etc. are a normalcy every year. So much so, that the Pinoy people have this to say about them:

Earthquake: They enjoy and laugh.
Typhoons: No Warning, No Worries!
Landslides: Not a care in the world.

This may sound unbelievable, but there is a reason. They have really philosophical terms that explain a lot of cultural characteristics. The one that brought me to understand the natural disaster phenomena was this:

Bahala nâ: What will come will, come. (loose translation)

As such, there is no system in place to warn anyone of typhoon or other natural disaster. When combined with a slow internet connection, our team would hear about potential storms from our friends and family around the world. Ironically, the locals have a much different view of this "news". The surf culture actually embraces it: 'Big surf on the way!" and the others are overall less concerned: "Bahala nâ."

Our architectural purpose is to inspire a more *Resilient Coastal Community* in and around Siargao Island. According to National Geographic, the Philippines is the third most at-risk nation due to climate change and it ranks second for weather related losses as of 2012. The reason we chose Siargao Island (out of 7,107 Filipino islands) as our first stop on our *Philippines Resilience Mission* was because of our strong connections and its current level of development. Furthermore, it seems that the word is out on the absolute paradise that this remote island encompasses. It holds the title of the 8th best surf spot in the world, has advertisements in NYC, London, and other massive world hubs, and is bursting at the seams with new construction. It creates the perfect platform for resilient architecture ideas and inspiration, in addition to being a hidden treasure beyond your wildest dreams.

Our mission is to be a neutral source of information of local resilient building technologies and ideas. Our work has been a completely different spectrum of 'architecture' than what we worked towards in NYC. Our barriers to construct resilient buildings are no longer plagued by bureaucratic red-tape from insurance companies, liability concerns, and time constraints. Instead, the fight turns to upside-down, corrupt government systems, major payoffs, and the slowest task evolution on record. The heat, combined with 'island timed' meetings that must fall in between hammock siestas, turns simple tasks into week long battles. Planning on short notice is also difficult. Nothing can be confirmed a day ahead of time and if you require an internet connection or power dependent tasks, plan on a four day window. However, the lack of hustle and bustle makes for a beautiful life.

Hinay Hinay Long Bali: slowly slowly my friend.

We have come up with two methods thus far. The first is a tiered map that starts with the full island and zeroes in on our local town, General Luna. The inner rings are made through a series of simple diagrams. Some layers shown are Topography, Mangrove Cover, Reef Areas, Zones of Industry, Lines of Projected Sea Level Rise (at different years), At-Risk Areas (Low Lying, Populated), Evacuation Routes, Planned Building/Development and Areas of Opportunity. Then we zoom in to General Luna, particularly because this locale is the most impacted by tourism. A set of rules, in our opinion, would start to govern healthy development moving forward.

Our future goals are to protect the local ecosystems at the environmental and human scale. Infrastructure and street planning are non-existent, so ideas about safer streets and place creation are needed as well. Additional maps we plan to create will show building use [residential, commercial, civic/cultural, tourism], in order to inform zoning and better planning, and typical conditions of the built environment in towns like General Luna. This would be the jump to a smaller, more intimate scale of design. Example documents include small plans and axonometric views of 3 or 4 block typologies to show existing conditions and the resilient/sustainable/social strategies that could improve such conditions. These strategies could be as simple as providing benches, gutters, etc. or could be more advanced systems that involve water/solar collection. The typologies we've established at this point are:

Dense Town Block *(Housing + Small shops/resources)*
Commercial Block *(Larger Stores/Businesses as anchors)*
Stilted Housing Block *(above water, unregulated, self-built circulation extremely dangerous + one of a kind)*
Isolated Housing *(single house on 'private' land/ relationship to street, water, etc., and could apply to Resorts as well).*

Opposite: A Filipino hut. Image courtesy of Austin Reed.
Above: A young boy skateboard. Image courtesy of Austin Reed.

Currently there are no real maps of the island and essentially zero building regulations. One of the hardest obstacles we are facing now is how to translate all this information into easily digestible infographics that anyone can understand with very basic English speaking capabilities.

After living and learning on Siargao for 8 months now, an unstoppable local team has assembled and joined up with some international counterparts. All of us agree a more holistic and all-encompassing plan is essential for a successful effort here. The plan is to build an example of simple design to exemplify Filipino Architecture. The actual function of the enclosure could be a public space open to anyone and everyone, a community hub used by the local peoples as an open space for ideas, collaborations, events, meetings, or simply relaxing, or a place of economic benefits where information can be posted. Another idea is to have everything rooted in surfing and skateboarding with the intention of bettering General Luna, the surrounding barangays, municipalities, and other provinces. Surfing has a Hollywood history and in the past 10 years has become the main vocation of the island. Skateboarding has just started to show up on the island with the completion of the first concrete road. We find this to be a monumental opportunity as a place of betterment and incentive, a perfect fit for the island setting, and a superb addition for locals of all ages and travelers.

Going further in order to foster the Bayanihan Center and hit on all resiliency and sustainability levels, we are attempting to spread into multiple realms using multiple tools. Some of the large scale plans include: the first zine publication, projects, propaganda, and Architecture, of course! A local skate night has been established with our own team gear. We only have two working skateboards, but are shared by over twenty per board. A close relationship with a local group, STOA [Siargao Tourism Operators Association], has been a perfect way to help the new and old resorts become more sustainable in practice and in architectural function. The collaboration factor has been the slowest, but could be the most effective way forward into the future. By bringing together local groups, non-profits, and key people we can leverage individual efforts into large scale projects that include multiple levels of government and legendary locals in order to fix the broken system. ■

Austin Reed
has his roots planted in the Rocky Mountains of Colorado in a little town called Bailey. Design/ Build is his main focus and feels a true designer should be able to build what they draw. Reed has a soul to squeeze winding around the world in search of good times, architecture, and every bump in the road.

EMERGING LEADERS IN ARCHITECTURE [ELA]
AN HONORS ACADEMY OF THE VIRGINIA SOCIETY AIA

As the Young Architect Regional Director for the Virginias, one of my goals this year is to advocate for the positive impact that young architects have on their communities, particularly through successful leadership programs. One example from this region is an honors academy organized by the Virginia Society AIA.
The Emerging Leaders in Architecture (ELA) develops future leaders in architecture firms, in communities, and in the profession. The goal of ELA is to accelerate the growth and maturity of young architects through exposure and experience that will advance their careers and enhance their ability to serve society as leaders in their community. It is a year-long program of seven seminars designed to provide participants with essential skills in the areas of communication, financial management, legal /ethical issues, public service, and professional networking.

Educational sessions are structured around presentations, discussions, team exploration, analysis, consensus-building, collaboration, and case studies undertaken by participants selected for their potential to be outstanding contributors to the profession and to society. Renowned speakers and facilitators from the public, private and non-profit sector, as well as academia, deliver these sessions; providing participants with advanced knowledge and skills related to specific areas of leadership and practice. Participants also recruit a one-on-one mentor to work with them during the class year.

A class project allows hands-on application of the principles and skills discussed in the sessions and the opportunity for young architects to contribute to the sustainability of Virginia communities. Each year, participants collaborate with a local government entity, non-profit organization or community partners to address a pressing need in one of the host cities. The projects have had great success, encouraging fruitful discussions and positive change at each project site.

According to Brian Frickie, AIA, one of the founders of the program, *"ELA's success is due to the dedicated steering committee members who devoted themselves to developing the program and to refining it continuously since it began."* He adds that the program is based on core principles essential to leaders in architecture.

Participants of ELA 2015 on a site visit. This year's class project will focus on a waterfront Norfolk neighborhood where the floodline and sea-level rise are threatening the stbaility of the community,.

Brian J. Frickie, AIA

is Principal and President of Kerns Group Architects in Falls Church, Virginia, where he works on institutional, commercial and multi-family projects throughout the mid-Atlantic region. He is the 2015 Chair of the National AIA Small Firm Round Table (SFRT) where he initiated and leads the APP Project ("Architect's Professional Primer") for emerging professionals, launched as "AIA Kinetic" at the AIA convention in May. Previously, he served Virginia Society AIA for five years as a Director and as President, during which he advanced a number of new initiatives, including the Virginia Society Prize for Design Research and Scholarship, the Practice/Academy Summit, and the ELA Program.

Highly relevant and useful program content
The program fills a need for exposing young designers to topics and skills that add value and build essential competencies beyond education and firm practice. Internal training programs of firms, while valuable, cannot provide the instructors and in-depth perspective this program consistently delivers.

Effective, year-long format
The program's format of full-day presentations offered over the course of a year makes it an easy schedule and the class project focuses on applying concepts between sessions. Together for almost a year, the participants network and bond at a greater level of depth than is possible in one-time seminars.

Outstanding instructors
Instructors are experienced professionals in their respective fields: CEOs and principals of well-known firms, design faculty, allied professionals, community leaders, and representatives of key client groups.

Office tours
Sessions are hosted at a number of firms, exposing participants to a variety of practices, businesses and organizations. These tours also create additional opportunities to develop relationships with peers and mentors across the state.

Interaction with public officials, civic leaders and clients
Selected sessions are held in collaboration with community leaders as well as past and current clients of host firms. This kind of interaction is unique to the program; allowing participants to develop and strengthen valuable communications skills.

With the seventh class starting this year, ELA has enough depth to become a model program that can be adopted by other AIA components. This article highlights two of the projects undertaken by an ELA class and the impact of this program in developing leaders in the architecture profession.

Josephine Arbaugh, AIA, NCARB, LEED AP BD + C
is an Architect and Urban Planner at AECOM as well as the Young Architect Regional Director for the Virginias. As an active member of the Blue Ridge Chapter, she has spearheaded a number of community organized events including the Roanoke Urban Effect Design Competition and Roanoke Parklet. She is an alumna of the ELA program class of 2012.

GREEN DOT PROJECT CHARLOTTESVILLE, VA

Our class project emphasized a harsh reality; 29% of families in Charlottesville cannot make ends meet. Our strategy to help these families focused on organizing the community to work together to create economic opportunity through job generation. Inspiration for this strategy came from the Orange Dot, a report that highlights the existing income gap and unemployment situation in the City of Charlottesville.

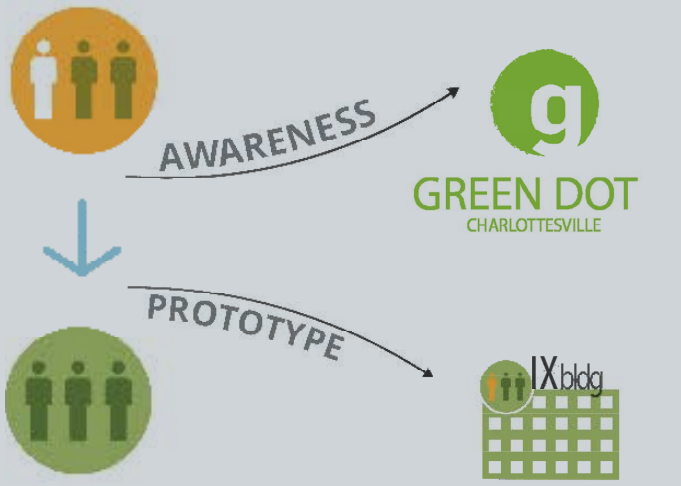
In order to meet our goal, the class partnered with a group of talented and motivated community leaders comprised of local entrepreneurs, developers, architects and members of City Council. Their diverse backgrounds brought different perspectives, new ideas and values from a broad spectrum of population groups. Working with trusted citizens allowed the class to understand the underlying issues contributing to poverty. Their relationships with the underserved population were also fundamental in the development of a job-generating and training initiative. In order to better coordinate our efforts, half of the team focused on a prototype for a small business incubator while the other half focused on bringing awareness to the social reality behind Charlottesville's economic disparity.

As architects, we do more than just design buildings. We solve problems. These problems require collaboration, leadership and the ability to conceptualize a vision. By leveraging the knowledge and existing resources of the Charlottesville community, the group was able to organize a forum for change, bring leaders together, and create a vision so compelling that it resulted in the establishment of a new organization.

“Green Dot Charlottesville” now exists as an action plan; a way to harness the potential of the community and its citizens. This plan includes the development of a light industrial hub and workforce development center that will house businesses such as catering, food canning and textile production.

Leaders and citizens were very inspired by the momentum generated by Green Dot and the work of the ELA class. Our impact is reflected by the ongoing efforts of the community to eradicate poverty in the City of Charlottesville.

Michael DeMonaco Assoc. AIA
ELA Class of 2012



Top: Green Dot graphics designed for the client 's awareness campaing. Right: Conceptual master plan for the transformstion of a vacant warehouse into a light industrial incubator

Ryan McEnroe, AIA, ASLA, LEED AP
Project Architect, McGraw Bagnoli Architects
2014-2015 Middle Atlantic Young Architects Regional Director (YARD)

ELA Class of 2010

"I found my time within the ELA program to be forever impactful upon my professional development. As a scholar of the 2010 class, I found the structure of the program and content of the sessions to be very rewarding and increasingly important for emerging professionals. In 2013, I was asked by then AIA|DC Chapter President David Haresign, to create a similar leadership development program for the AIA|DC Chapter. Along with Sean Stadler, AIA, LEED AP, I co-founded the Christopher Kelley Leadership Development Program (CKLDP). This feat would not have been possible without my experience and understanding of the ELA program. Unknowing to its founders, the effort put forth to develop such a robust program for emerging architects within the state of Virginia goes well beyond the 16 scholars that take part in the program on a yearly basis. The structure of the ELA program allows itself to be replicated within other AIA components, while addressing unique and specific characters to a particular region."

Michael DeMonaco, Assoc. AIA
Alloy Workshop
Board Member Preservation Piedmont
2015 -2016 Virginia Regional Associate Director (RAD)

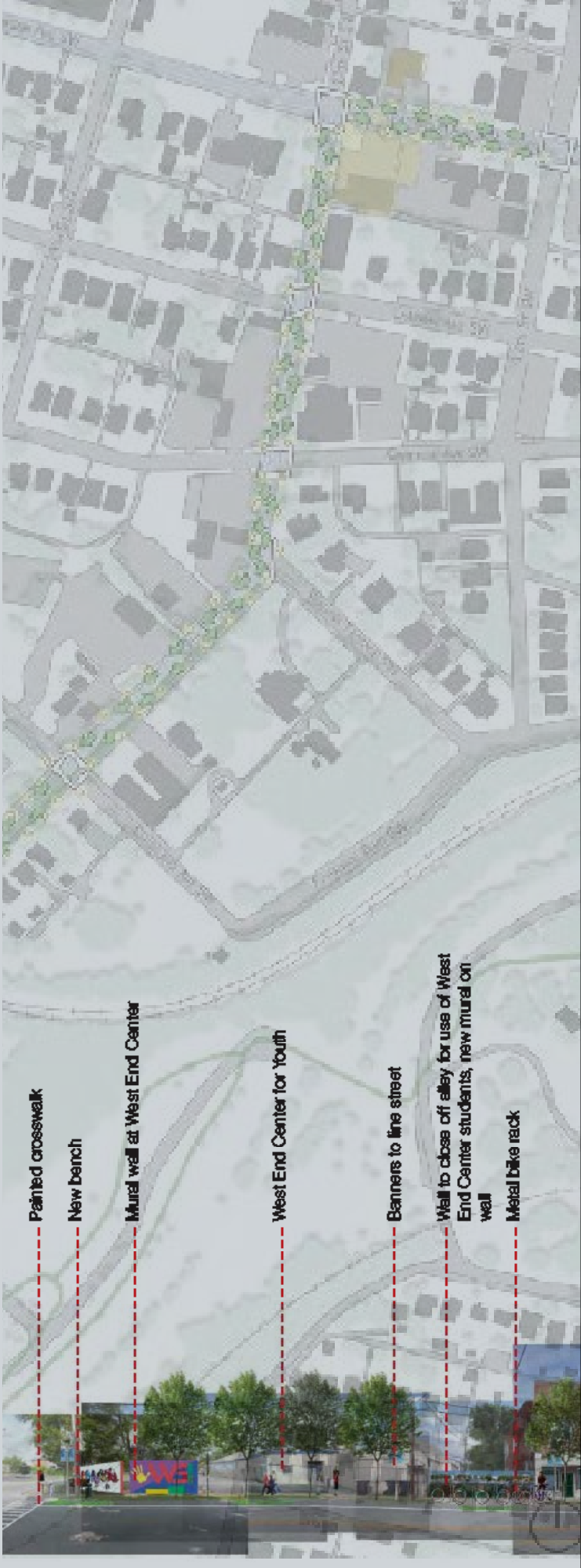
ELA Class of 2012

"The ELA program significantly improved my development as an Architect. I gained an understanding of how to successfully engage people in my community and the confidence that I can make a difference by using my knowledge and skills. Being in the ELA program afforded me the opportunity to meet community leaders who are trying to improve the lives of the people around them. They can use the help of an architect in a variety of ways, not just designing buildings."

Isabel Argoti AIAS
University of Virginia
Architecture Student, 3rd Year
Residential Advisor for First Year Dorms
President of the Alpha Rho Chapter of Sigma Lambda Upsilon

ELA Class of 2015

"ELA opened my eyes to the role architecture can play in my life outside of studio. As an undergraduate student, I was excited to meet so many working architects with so many different approaches, interests, and thoughts on architecture. I was still hesitant about my aspiring career choice because it seemed so demanding and competitive. However, meeting my fellow ELA Class members and presenters hasmade me feel at ease with my decision and has really given me motivation to keep going in this career. I have figured out that I can truly mold my architectural profession to something I really am passionate about and something that excites me. The program has definitely encouraged me to network more, reach out to more UVA Alumni, and get started on my thesis project for next year. ELA has given me incredible resources so far, I could not be more ecstatic and honored to participate in ELA."



WEST END VILLAGE PROJECT

ROANOKE, VA

The 2013 Emerging Leaders in Architecture partnered with the Stakeholders of the West End and Roanoke's Department of Planning to focus on the West End of Roanoke for over 7 months. The 16 class participants used the project as a catalyst to change the impression cast by the West End in the first critical 7 seconds.

The project correlated with the City of Roanoke's 2011-2014 financial focus of HUD funding.

Our analysis showed a 1st tier suburb of Roanoke, with proximity to the Greenway bike system, with many walkable amenities.

Our collective impression of the neighborhood highlighted historic architecture and unique landmarks, but also boarded homes and broken sidewalks. The neighborhood struggled with prostitution, drug dealing and vacancy, as well as low property ownership and poverty. This is the first impression that we sought to change.

The locally owned and operated businesses were strong. The Stakeholders were passionate and we wanted the first impression to reflect their passion.

Our focus was a 0.4 mile stretch of the 13th Street Corridor which we identified as a significant artery through the West End. We repurposed the public right of way to include new neighborhood branding. We promoted foot traffic with crosswalks and street graphics. We broke up the large expanses of paving with medians and bike paths. We proposed street trees, lighting and unique street furniture.

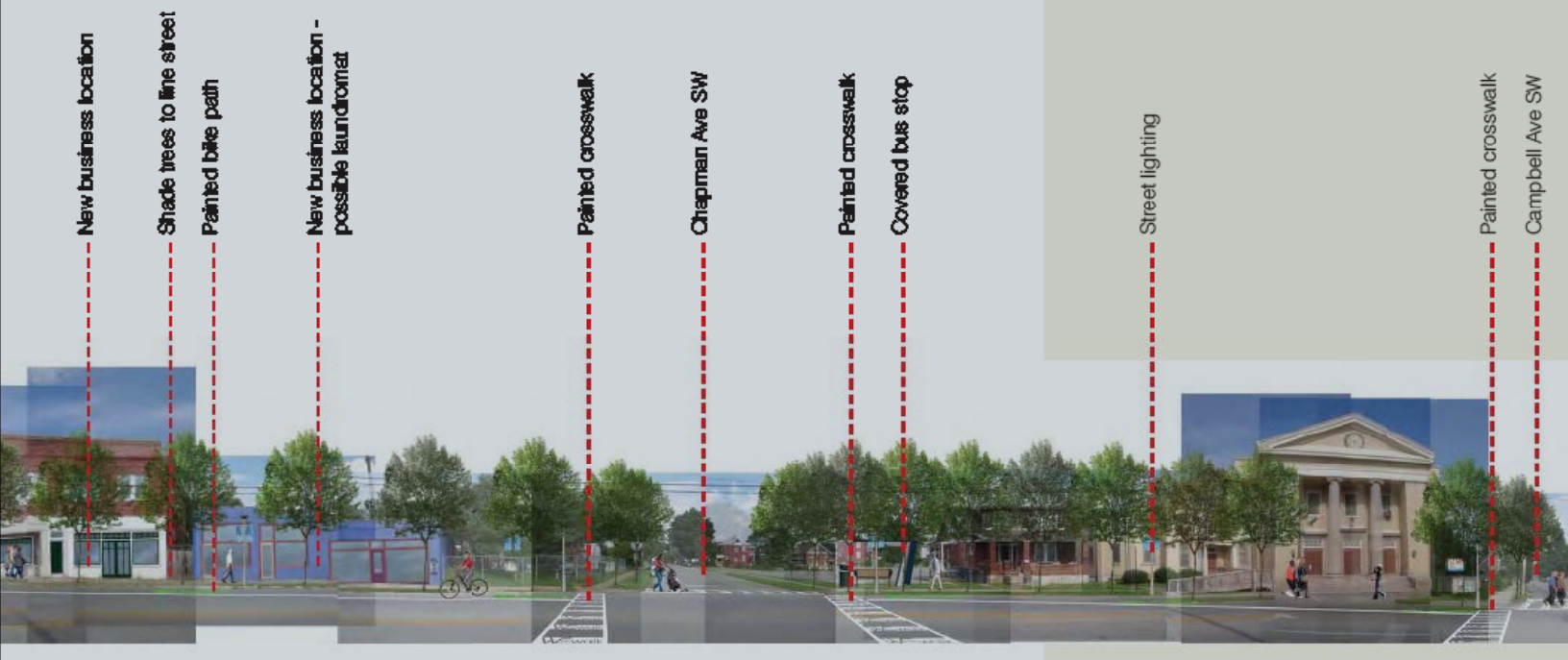
To inspire neighborhood unity, we renamed the area the West End Village. To announce one's arrival we proposed a village gateway; a streetscape branding that included new bus stops, street signage, and information nodes. We outlined a phased timeline to implement low-budget, high impact changes right away to create buzz and establish private and public investment.

A few intentional design moves can create a more welcoming and livelier place.

The ELA opened up a dialog that continued after our project ended. The Stakeholders and the City had previously discussed investment in residential programs and our project changed the focus of that conversation to more immediate, cost efficient actions.

Raedun de Alba, AIA, NCARB
ELA Class of 2013

Top: Rendering developed by class participants as part of a branding strategy for the West End neighborhood in Roanoke, Virginia.
Bottom: Group picture of ELA class of 2013



PERSONAL BRANDING 101
5 TOOLS TO FORWARD YOUR CAREER

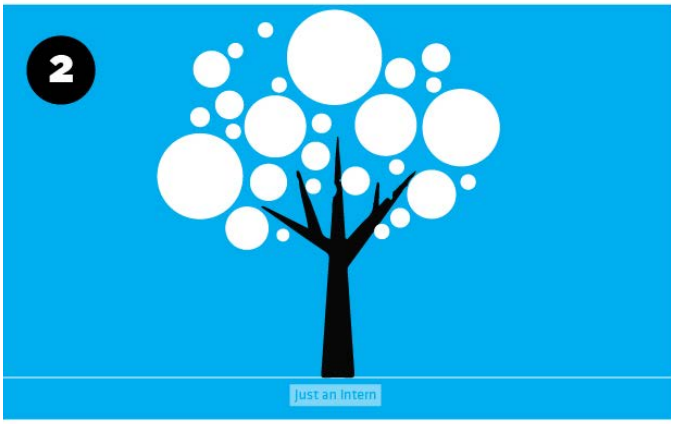
Almost all of us nowadays have a brand on social media that is unconsciously crowd-sourced by everyone we know. The question is no longer IF architects need a personal brand, but how we can curate the brand that already exists. The difference between a successful brand and merely a digital existence is the consciousness behind it. I have written an article on the 6 Keys to Build Your Brand on my blog, but here I want to shift gears towards seeing branding as a tool to help us succeed in our careers.

1. Even Batman needs a Backup Plan

Your brand is like your backup plan when you are nervously sweating in the interview room. It's always easier to sell a product when you know it like the back of your hand.

I am not a great speaker, so having an identity actually helps me a lot when I meet new people. Having a consistent brand means you don't have to reinvent the wheel every single time. The elevator pitch? Done. The "tell me about yourself"? Done.

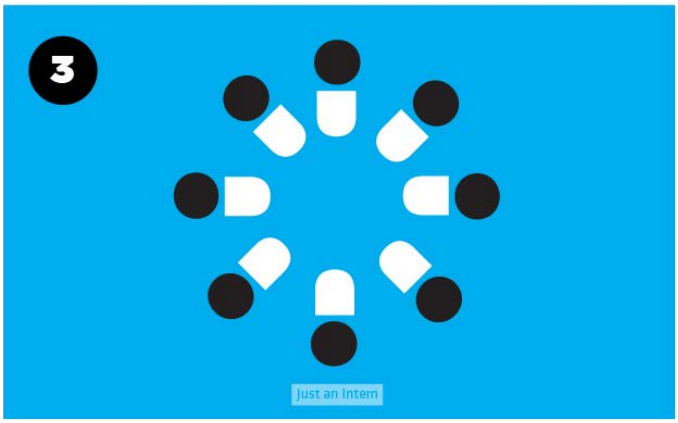
2. It's like your Secret Garden



Using your personal brand as a side project is a great way to express your imagination while buried in those bathroom details.

When I first started writing my blog, I had no intention on building a brand for myself. I started it as a way to channel the creativity that I wasn't getting from my first job. I am not saying that everyone should write a blog (if everyone blogs, it lessens the chance that anyone will have time to read them). You definitely want to keep the creative side of your brain active in case your boss asks you to design a building in one day (yes it happens!).

3. Branding = Sharing



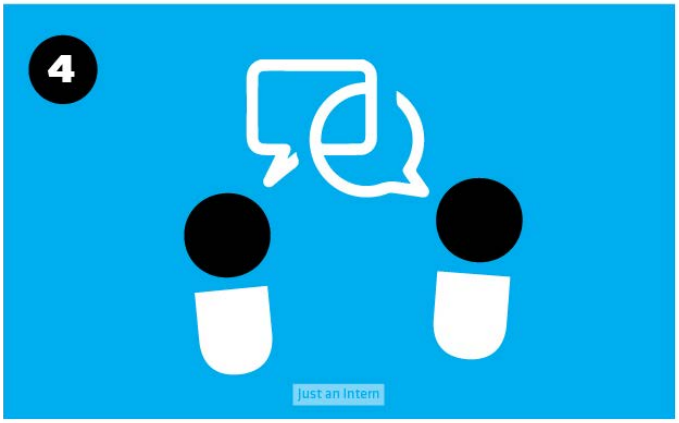
Branding is an ongoing self-realizing process, just like architecture is a life-long learning career.

The core of branding is about creating and demonstrating your value. We all have a certain level of professional knowledge that makes us an asset to this industry.

BIG built their brand by sharing their diagrammatic thought process; Gensler has research programs that reinforce their expertise; by sharing my experience as an intern architect, I have created an identity for myself. This could be a totally new topic, but here are a couple ways for you to share your knowledge:

+ Join organizations that align with your values.
+ Start a 20/20 presentation at work on whatever topic you like (20 minute with 20 slides).
+ Become a mentor/leader.
+ Train others at work / outside of work.
+ Post on social media architecture/design news that you find interesting.
+ Contribute to architectural publications or your office's blog if they have one.

4. Bring it up in your Interview



This is by far the most useful one because you can truly see it in action. All the collaterals that come out of your branding exercise are great tools to get you an interview. But the real benefit of having a brand is to bring it up during your interview.

I have been to interviews where the interviewer had read my blog from a link on my resume. Ahead of my call back, I uploaded a new post, which he also read and expressed interest in the topic. The more similarity they find in you, the more they will remember you. So create that similarity by making a brand that speaks for you.

5. Why are you special?

When firms review candidates, they look for skills that align with their specific work. You might think that we are too young to specialize in something, but being a generalist is not as good as you think.

It doesn't even have to be about architecture. The first company hired me mostly because they needed someone to help them consolidate their graphics. Someone like me, who can draft at a very low hourly rate (just like us all interns) and also do graphic design was the perfect fit for them. Building a brand around a specialty is a great way to tell employers/potential clients why they should hire you.

Branding is an ongoing self-realizing process, just like architecture is a life-long learning career. We can't figure out who we are in one day. Your brand will evolve as you continue to gain experience as an architect. So just take your time and breathe. If it takes longer to build your brand than you thought it would be, don't worry because branding never ends. As long as you learn how to use it as a career tool, you are good to go.

Thanks for reading!

Joann Lui, Assoc. AIA, LEED Green Assoc.
is a Job Captain at Gensler in New York, NY. Lui is also a graphic designer and runs a top-rated blog Just an Intern, a documentation of our life in between architecture school and licensing. Her interests revolve around urban architecture, professional development, arts and graphics.

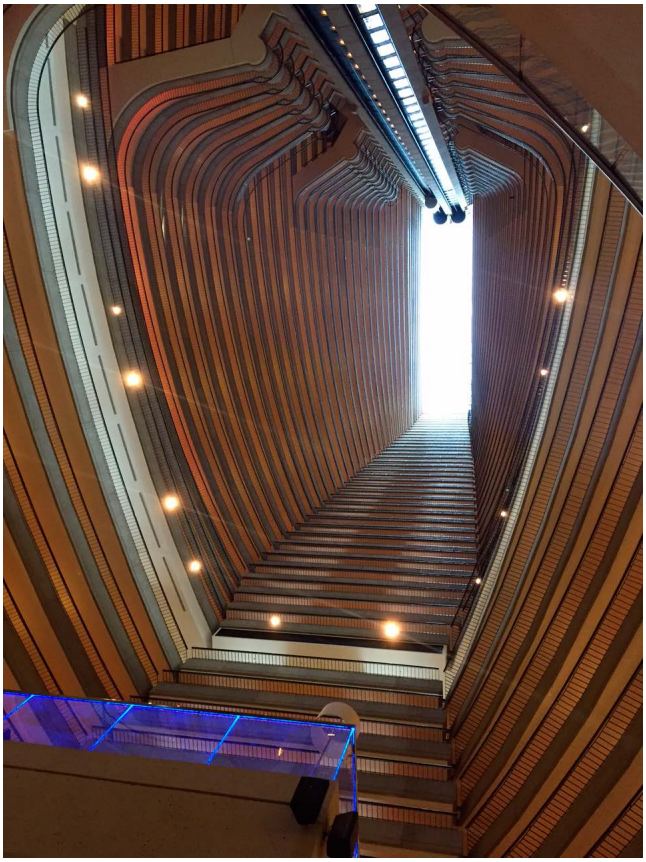
YAF WALKS

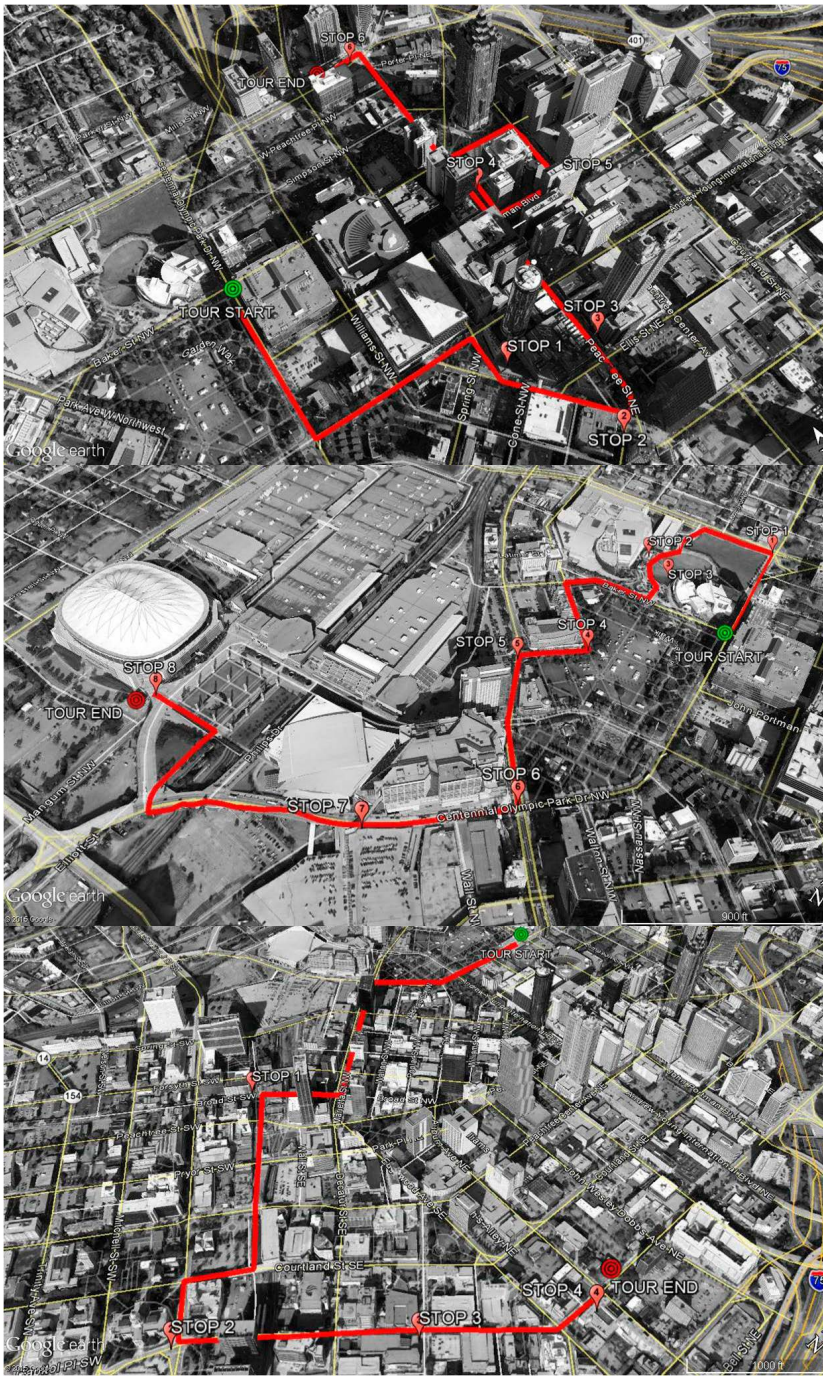
A YOUNG ARCHITECT'S GUIDE TO ATLANTA

It was early enough in the morning to avoid the heat and humidity that is typically associated with late spring and early summer in the south. A group of young architects, students, and the young at heart gathered at the corner of Centennial Olympic Park Drive and Baker Street to begin the day with an hour of walking around downtown Atlanta. For the third consecutive year, the Young Architects Forum hosted the YAF Walks as part of AIA Convention. As in previous years, the focus of the walking tours was to get a better glimpse at some of Atlanta's most famous architecture and to promote active lifestyles. We did this by highlighting how we, as architects and designers, can have a positive influence on the overall health of the communities in which we live, work, and play. Although one does not associate Atlanta with design that promotes pedestrian friendly design (the city is often the poster child for urban sprawl), this year's walks provided some interesting conversations and examples of Atlanta's past mistakes and more importantly what is being done to change the future of this vibrant city.

The three routes that were organized for this year were appropriately titled "Downtown as it Developed", "The Revitalization of Downtown", and "Downtown Atlanta-Future Revitalization". All three of the routes originated from Centennial Olympic Park, which was constructed for the 1996 Olympic Games. Since that time, the park has proven to be a major catalyst for the redevelopment of downtown Atlanta which for many years was considered a blighted and uninviting part of the city. Proximity to parks is a key factor associated with higher levels of physical activity and healthier weight levels among both adults and children. As the groups walked around the park we discussed the importance of public open spaces within the urban environment and how these spaces can have a positive effect upon the cities inhabitants. Although its past is evident and the edges of the redevelopment are clearly defined, a host of significant projects including the World of Coca-Cola, the Georgia Aquarium, and Phillips Arena have begun to create a network of buildings that connect pedestrian friendly routes and public spaces for use by all of Atlanta's city dwellers. Newer projects such as the College Football Hall of Fame and the Center for Civic and Human Rights (pictured) ,which both opened in 2014, have served to further diversify the destinations that draw pedestrians through downtown Atlanta.

As in previous years, this year's YAF Walks truly reflected the convention host city. Atlanta is a city that seems to have learned from its past mistakes and is being revitalized for a more sustainable future. Although a bit more challenging than in previous years, tour participants still found ample opportunities along the routes to highlight and discuss examples of what makes our cities walkable, active environments. While trends toward obesity and inactivity are increasing at an alarming rate, they can certainly be deterred if we design our cities in ways that promote walking, biking, and other forms of daily physical activity. Less than half of American children are able to meet the recommended sixty-minutes of physical activity per day and these children will soon be the adults that cause an even greater strain upon an already overburdened health care system. Architects must play a crucial role in shaping our cities and communities and we must be at the forefront of this ever-growing public health concern. It's important to be in a position of leadership alongside elected officials and community leaders to promote the value of good design that facilitates active lifestyles and sustains vibrant and healthy communities. ■





Opposite: The Center for Civic and Human Rights. Image courtesy of Ben Kasdan.
Above: The atrium of the Marriott Marquis in Atlanta. Image courtesy of Ben Kasdan.
Top: YAF representation on the YAF Walk. Image courtesy of Ben Kasdan.
Right: (Top to Bottom) Downtown as it Developed, New Revitalization to Downtown, and What's Next? Urban Revitalization. Images courtesy of Robert Barfield.

Robert Barfield, AIA, NCARB
is an architect located in Charlotte, NC. He currently serves as the Community Director for Young Architects Forum and is also the Architects Licensing Advisor for North Carolina.

AIAKinetic
MAKING A CAREER IN ARCHITECTURE ACCESSIBLE TO ALL

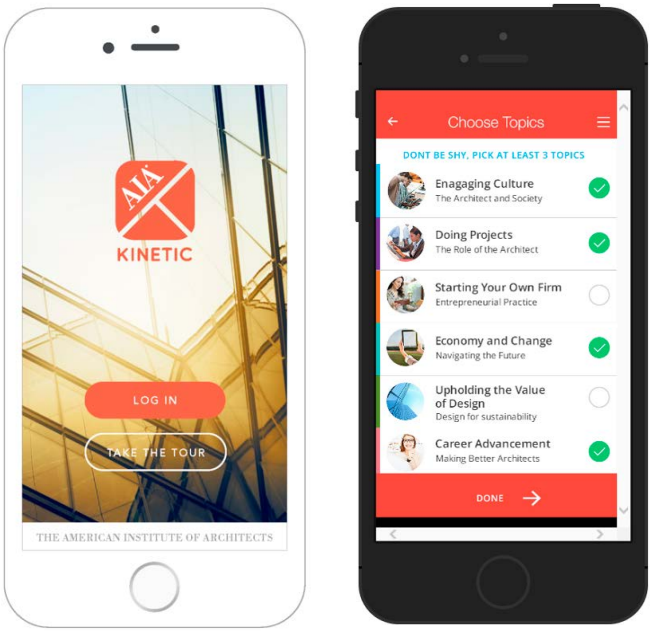
AIAKinetic launched at the 2015 AIA Convention in Atlanta in May. It is the culmination of two years of development and collaboration between multiple AIA Knowledge Communities, and spearheaded by the Small Firm Roundtable (SFRT) under the chairmanship of Brian J. Frickie, AIA. YAF Connection *caught up with Brian on the AIA Convention Expo floor, just before the launch.*

What was the process for developing this app?

We didn't start with an “APP” as the goal. We started two years after a conversation at the Knowledge Leadership Assembly [KLA] in Seattle in 2012 where each Knowledge Community [KC] chair gave a three minute presentation on what they were doing. More than half of them stood up and said, "We're doing a boot camp for emerging professionals" or "we're doing a toolkit for emerging professionals". The SFRT decided that we could help by facilitating all these separate efforts. The SFRT is about changing the profession and making better architects, so we felt it was a good fit. At first, we thought we would bring forward out-of-date publications and provide some new content in a nice format. We originally thought about publishing it on a website, but we realized that if it's not maintained and engaged, it's dead as soon as it's published. Coincidentally, YAF gave a presentation that year on the results of Summit 20 and the six core areas that architects need to know to be successful. Interestingly enough, Jim Franklin wrote a book in 1990 (Current Practices In Small Firm Management: An Architect's Notebook) organized around those same topics.

Would you conclude that every 20 years, the manual has to be redone?

We found there is an essential core to what it takes to practice architecture and the categories don’t really change, yet people say they don't have that information. The more we discussed it, we realized it wasn’t about publishing a PDF of Jim's book, a boot camp or toolkit - it was more about creating a career guide. The beginning starts with "How people don't understand architects or what we do". That is followed by sections on the value of design and its impact on society, individual career development, starting your own firm and doing projects. Finally, there's a section on the economic cycles we confront every eight to ten and some strategies for navigating the future.



Screenshots of the App in use. Images courtesy AIA Kinetic

How do you plan to deliver this information?

We looked for ways to truly engage people and we found that one of our team members, Steve Burns, had some insight we could use. He was architect who had created software for his practice that was not available from other developers. He has since sold his previous firm (software included) and created a company that develops software exclusively for architects (BQE ArchiOffice). Steve suggested we publish content that brings people back using proven motivational tactics. This concept goes beyond simple comments, likes, and dislikes in order to develop a community. Our goal is for users to submit articles, have other members respond, and grow the network as information is added. A secondary layer of "gamification", i.e. rewards and points, become a part of it as well. The culmination of these efforts is that in a couple of minutes, on a handheld device, a user can read, learn, and connect with others to keep the conversation going.

AIA Kinetic is available in beta version for iOS (Android is forthcoming). Feel free to share this with others you feel would be helpful as beta users. It is available at the following link.

How did BQE ArchiOffice get involved?

Initially, BQE/ArchiOffice agreed to become an early sponsor. They liked what we were already doing, not thinking that we needed their knowledge base to create the software. They like to be a part of projects that make things happen and SFRT was facilitating the people and content to bring this to life. We asked Steve to join the SFRT as an allied member and become more than just a sponsor.

How did you decide to make AIAKinetic dynamic?

Steve likens what we're doing with AIA Kinetic to a an APP he uses to help him compete with other cyclists [Strava]. As an incredibly competitive cyclist, Strava helped him find other people doing similar courses at a certain time and speed. He wanted to beat them. He feels architects are the same. Some of us pushed back, but he convinced us to offer an engaging, competitive platform to exchange knowledge. We took some of those attributes and applied it to this project. Steve has strengthened the SFRT and is a great example of the many people who have caught the vision.

In Strava, users become part of an enthusiast culture. How can architects and emerging professionals become a part of an enthusiast community and grow among fellow architects?

AIA Kinetic starts the conversation with over 250 topical articles. Our hope is that the conversation develops into a discussion, with users engaging with their own comments and, ultimately, by writing more articles. Gamification comes into play with a point structure for participation; the most points are offered for writing article, some points for reviewing, commenting and sharing, and a few points for liking and disliking content. The goal is to encourage people into a higher level of participation. We organized the APP around six categories, with 40 to 50 articles in each. We recruited fifty people from all over the country; six serve as section editors and six to eight writers contribute to each section. We even found some experts that were willing to convert 5,000-word articles into 250-word versions. Our goal was to pre-populate the content in all sections; to provide enough fodder to get the conversation started. The rest is up to the users.

How is the content reviewed?

Some of the articles are intentionally provocative. For instance, some include information that we know not everyone agrees with. We expect people to comment and hopefully contact us to take a different position or go further with the idea in their own article. The same editorial staff that put together the initial content is standing by, ready to proofread and edit the copy so that it carries the same tone to be published.

What is the longevity of this project? How do you keep the content dynamic?

Here we are, almost three years after the initial idea, and there are still opportunities to make this bigger, better, and more pervasive. This APP was created by AIA members for AIA members… and for anyone who wants to know what it means to practice architecture in America. It's fully supported by the AIA, but was not done by AIA staff. It was done entirely by volunteers. The AIA National board approved the effort, assigned administrative staff and allocated seed money, but never established any conditions to the project. They wanted us to be successful and even encouraged us to create the APP independently from aia.org , without waiting for the digital transformation. However, AIA Kinetic is design to be merged with other AIA platforms when they're ready.

What was the reaction to being outside of the realm of the AIA?

Absolutely positive. This is about changing the face of the profession. There may be some useful additional information behind the member portal, like participating in a conference or accessing an AIA document, but you're not required to be a member to signup, read content, or participate on AIAKinetic.

How can emerging professionals get involved to make this a better app?

Get engaged! Share it with others! Write content! As a section editor monitors threads, a specific topic may be prevalent or trending where an article needs to be written. We depend on users of the APP to write as an expert or commentator on those topics. AIAKinetic is intended to empower the next generation of architects and help equip them for successful practice. ■

AIAKinetic is available on iTunes and Google Play.

Brian Frickie, AIA
is Principal and President of Kerns Group Architects in Falls Church, Virginia. He is the 2015 Chair of the National AIA Small Firm Round Table (SFRT) where he initiated and leads the APP Project ("Architect's Professional Primer") for emerging professionals, launched as "AIA Kinetic" at the AIA convention in May.

#yafchat

@AIAYAF [Moderator] Hello and welcome to this month's tweet chat where we will be discussion Resiliency and the Architect's Contribution. #yafchat

@AIAYAF [Moderator] I'll post questions with Q1, Q2, etc - tag your responses today with A1, A2, etc #yafchat Today we will be using the hashtag #yafchat

@AIAYAF [Moderator] **Q1:** Define "resiliency" in your own words.

@L2DesignLLC (Lora Teagarden) A1 Withstanding life's changes. For architecture: Designed in a way to do so. #yafchat

@PlusLab (Illya Azaroff) A1 Ability of people, places, and things to continue to operate before, during, and after events; natural and man made #yafchat

@MeghanaIRA (Meghana Joshi) A1. Resiliency to me is staying on intended path/objective, no matter what the obstacles. #yafchat

@BKasdan (Ben Kasdan) A1 #Resiliency is the ability for #architecture to continue to serve the well being of its inhabitants following traumatic events #yafchat

@PlusLab (Illya Azaroff) A1 Take a licking and keep on ticking, to use the Timex ad #yafchat

@IanMerker (Ian Merker) A1. #Resiliency in architecture is an appropriate program & technology for timeless and regenerative development. A tall order. #yafchat

@ThisIsJLai (Joseph Lai) A1 #yafchat #resiliency is the ability to not only adapt, but to anticipate adversity. designing for the future

@branngin (Virginia Marquardt) A1. To withstand _____

@koreydwhite (Korey White) A1. Resiliency is designing a built environment that can withstand social, economic and environmental changes. #yafchat

@AIAYAF [Moderator] **Q2**. How would you define a "resilient city"? #yafchat

@L2DesignLLC (Lora Teagarden) A2 Diverse. In people, jobs, transportation, food/water source, architectural style/scale... #yafchat

@IanMerker (Ian Merker) A2. A resilient city has a long-range plan w/defined urban boundaries, density goals, infrastructure that adapts to climate change. #yafchat

@PlusLab (Illya Azaroff) A2 City with social and economic equity that makes its citizens stakeholders in the collective future #yafchat

@MeghanaIRA (Meghana Joshi) A2 To be in harmony with the naturally occurring conditions and the ability to evolve with the cultural/economic conditions #yafchat

@PlusLab(Illya Azaroff) A2. A collective future that results in built and unbuilt networks of assurance#yafchat

@ThisIsJLai (Joseph Lai) A2 A resilient city has adaptable infrastructure, but beyond that, a population of people who have a strong sense of community #yafchat

Moderated by the 2014-2015 AIA YAF Public Relations Director Evelyn Lee and hosted by the AIA **Young Architects Forum** (YAF). The yafchat for the month of May focused on **The Architect's Role in Resiliency Planning**

2,511 Twitter Followers

AIA YAF Monthly Tweet-up
20 May, 2-3:00pm Eastern Time

Theme: **Resiliency**
Hashtag: #YAFChat

@AIAYAF [Moderator] **Q3:** What role do you think architects should take in building resiliency in our cities/communities? #yafchat

@PlusLab (Illya Azaroff) A3 Leadership! As the singular profession that collaborates and cross cuts all industry, governmental and community partners #yafchat

@MeghanaIRA (Meghana Joshi) A3 Regardless of the magnitude of the project, educate the client about the effects of building it right vs. building it #yafchat

@L2DesignLLC (Lora Teagarden) A3 [1/2] I know I've said it before, but it bears repeating. We are stewards 1st. We literally take materials and mold them into new things. #yafchat

@L2DesignLLC (Lora Teagarden) A3 [2/2] Currently don't think about what that means. We're not creating out of thin air, people...Steward leaders first. #yafchat

@koreydwhite (Korey White) A3 Architects need to take a leading role in our communities as leaders. We have skills that allow us to be leaders, let's use them. #yafchat

@PlusLab (Illya Azaroff) A3 We are the key to #resilience. Given our training and work methodology, we design like we give a damn. #yafchat

@BKasdan (Ben Kasdan) A3 A #resilient city is one that both plans for worst-case contingencies and adapts to a changing world, with emphasis on community #yafchat

@_Clinger_ (Ben Kasdan) A3 We should be involved with the city/community and be stressing the importance of resiliency and placemaking #yafchat

@IanMerker (Ian Merker) A3 Set ethical standards for all projects & celebrate good work. Keep cliffside custom homes out of the mags unless they reach the bar. #yafchat

@morgangerdel (Morgan Gerdel) A3 #architects can be involved in local planning/ zoning general plans to ensure #development compatible w/ #resiliency #yafchat

@BKasdan (Ben Kasdan) A3 #architects need to lead the conversation on #resiliency & design the built environment accordingly #yafchat

@ThisIsJLai (Joseph Lai) A3 Architects should be the point guard, using design thinking & tech knowledge to lead diverse teams to plan #resilient cities #yafchat

@AIAYAF [Moderator] **Q4.** What do you think are easy wins/ resilient strategies that architects can help implement within their own community? #yafchat

@PlusLab (Illya Azaroff) A4. Community low hanging fruit starts with a community recognizing that it is a community #yafchat

@L2DesignLLC (Lora Teagarden) A4 Work with local nonprofits to provide growth plans, both economic/ physical. Simply be present in the community. Show your value. #yafchat

@MeghanaIRA (Meghana Joshi) A4 Never compromise safety - don't find loop holes in the code. Adopt sustainable practices as much as you can. #yafchat

@IanMerker (Ian Merker) A4 Endorse good projects @ public meetings, either as an AIA component or individual. "I'm an architect and I support this project because X" #yafchat

@BKasdan (Ben Kasdan) A4 #Architects can facilitate conversations between community stakeholders on #resiliency #yafchat

#yafchat

@ThisIsJLai(Joseph Lai) A4 To Build #resilient cities, architects need to design buildings not as stand alone objects, but as part of a bigger urban plan. #yafchat

@BKasdan (Ben Kasdan) A4 #Architects can also design structures to do more than just meet the minimum standards of the building code #resiliency #yafchat

@AIAYAF [Moderator] **Q5:** What are the largest issues your community/city/state is facing right now regarding #resiliency? #yafchat

@L2DesignLLC(Lora Teagarden) A5 Managing growth as economy picks back up. Smart growth that benefits city as whole vs. single/group with $$$ calling shots #yafchat

@PlusLab (Illya Azaroff) A5 NYC is in the slow rebuilding and the comprehensive regional #resilience projects that have roadblocks, political and others #yafchat

@MeghanaIRA (Meghana Joshi) A5. Water! California is running dry, but we are still building crazy and planting non-local.

@IanMerker (Ian Merker) A5 Drought and floods (yes, simultaneously) and energy dependence. Aging levies, useless dams and sprawl, sprawl, sprawl. #yafchat

@PlusLab (Illya Azaroff) A5 30,000 New Yorkers are still living out of home, living in temp hotel rooms #yafchat

@BKasdan (Ben Kasdan) A5 In CA, the drought is a big deal; seems like a new design solution to the #water infrastructure system is overdue. #resiliency #yafchat

@morgangerdel (Morgan Gerdel) A5 #Energy independence is key issue for #Hawaii. Water + electricity depend on #fossilfuel largely, no #resiliency. #yafchat

@AIAnwpr_YAF (Shannon Peterson) A5 In Montana, it varies by season - flooding, fires, and severe storms. Many people still cleaning up from last May's hail storm #yafchat

@ThisIsJLai (Joseph Lai) A5 Affordable housing in DC and other metro areas! #resiliency requires population diversity and community building! #yafchat

@AIAnwpr_YAF (Shannon Peterson) A5 Also, #resiliency impacts rural locations in MT as agriculture is a major economy and is at the mercy of Mother Nature. #yafchat

@koreydwhite (Korey White) A5 There is an odd dichotomy between needing housing now and needing well design housing for the future #resiliency of the city. #yafchat

@AIAYAF [Moderator] **Q6:** What role does local culture play in #resiliency planning? #yafchat

@MeghanaIRA (Meghana Joshi) A6 Local culture dictates whether we care collectively for our community, our city, and our planet #resiliency #yafchat

@L2DesignLLC (Lora Teagarden) A6 It goes back to what @PlusLab was saying re: community. You're in it together. The 1st step before you can start is realzing that. #yafchat

@ThisIsJLai (Joseph Lai) A6 We need to change the culture of long commutes and car dependency for more #resilient cities at human scales #yafchat

@morgangerdel (Morgan Gerdel) A6 Hawaiian #Ahupuaa land division ran from mountain out into ocean containing all elements for community resources watershed #yafchat

About the Moderator
Evelyn Lee, AIA

Lee is the Public Relations Director for the YAF AdCom, serves as Regional Representative for California to the AIA National Strategic Council, is the founder of the Practice of Architecture Website and is a Senior Strategist at MKThink in San Francisco, CA

@AIAnwpr_YAF (Shannon Peterson) A6 When prevalent thinking in rural cultures is "this is the way we've always done it", it can impede new ideas & progress. #yafchat

@PlusLab (Illya Azaroff) A6 Two sided coin. deep history and culture may foster bad habits, impeding #resilience. But that could also be the key to the future #yafchat

@IanMerker (Ian Merker) A6 Local culture fails at #resiliency when the ones that speak up have selfish things to say. We need Seventh Generation ethos. #yafchat

@PlusLab (Illya Azaroff) A6 Future whole committee planning with in place local assets are good foundation for #resilience #yafchat

@IanMerker (Ian Merker) A6 Find Common ground, i.e. we love our rivers and our basketball - what can we do to keep both? #yafchat

@AIAYAF [Moderator] **Q7:** What resources/ best practices do you know of or would be helpful to have with regards to #resiliency? #yafchat

@PlusLab (Illya Azaroff) A7 FEMA MAT reports and technical bulletins = treasure for architects. #resilience coastal construction manual is excellent #yafchat

@IanMerker (Ian Merker) A7 SDAT program and Resilient Design Institute

@MeghanaIRA (Meghana Joshi) A7 Design responsibly. A building is more than just another permit and just another paycheck. #yafchat

@PlusLab (Illya Azaroff) A7 NDPTC is all natural hazards and the consortium of disaster preparedness. covers all hazards. #yafchat

@ThisIsJLai (Joseph Lai) A7 Nothing specific, but I believe we need to use @AIANational, @UIA2014Durban to facilitate discussion across all professions. #yafchat

GREATER NEW ORLEANS URBAN PLANNING

A CONVERSATION WITH JACOB DUNN AND ARON CHANG

Jacob Dunn grew up in the Boise, Idaho in the Pacific Northwest (ASHRAE Climate Zone 5B) before recently moving to his new home in New Orleans (ASHRAE Climate Zone 2A). He holds a Master's Degree in Architecture from the University of Idaho and his professional background has pivoted between research, sustainability consulting, education, and architecture. After working for about a year in London for ARUP's Foresight Innovation and Incubation group, Jacob finished his degree and started working at the University of Idaho's Integrated Design Lab (IDL). At the IDL, he specialized in consulting through architectural simulation, conducted research on energy efficiency, and taught various graduate-level architecture courses. Jacob used simulation on a daily basis for both architectural and engineering analysis, and across a broad spectrum of building types in both new and existing structures. After four years of being a Research Scientist, he was recruited out of Idaho to Eskew+Dumez+Ripple (EDR) and tasked with enabling evidenced-based design and simulation analysis to their award-winning design firm. At EDR, Jacob currently works with design teams to explore the link between aesthetics and performance through simulation and a scientific approach to sustainability.

JP: Can you give an overview of how your experience with deep energy retrofits, financial analysis, and the historical context of New Orleans incorporates with resilience?

JD: One of things that sets our firm apart in the larger notion of resilience is our research Fellowship program, now in its fourth cycle. EDR brings in a research Fellow to work through larger issues affecting the architectural practice. The goal is for them to work somewhat independently from the deliverables of day-to-day projects, but to conduct their research in a way that feeds back into our practice to inform future design efforts. In 2014 the topic was on Resilience. During that year, one of the Fellow's tasks involved poring through the work that EDR has produced over the last decade in order to pull out the resiliency themes of different projects. This identified everything from ideas about emergency preparedness plans, regional contextual efforts, building hardening, and energy relationships. It attempted to encompass the comprehensive and integrated systems that resilience spans across.

One of the key takeaways from the Fellow's research was the idea of energy efficiency and resilience and how the two can actually leverage one another. Given my background in energy efficiency research and sustainability consulting at the University of Idaho Integrated Deisgn Lab prior to coming to EDR, this aspect of resilience really resonated with me. My work at EDR has focused on clarifying the link between energy efficiency and resiliency from both a building systems standpoint and at the building community scale, i.e. business corridors, campuses, main streets, and neighborhoods. Thinking at the larger scale has the potential to increase the resilience of our built environment, versus just making a single building more resilient to disaster. Think of it as systems thinking versus a bunker mentality. That's the trajectory that I'm trying to plug myself into in the context of energy; resiliency of energy efficient micro grids and how they provide a framework to make our cities more resilient systems. It all starts with individual building efficiency and the right mix of energy demand. These two things are key to making various microgrid configurations financially feasible.

IA: Energy efficiency is at the building scale, while the idea of distributed micro grids would be the community scale. How do you bridge from the cluster of buildings or the neighborhood to the town, state, regional or geographic setting?

JD: It all starts with communicating the value of energy efficiency within a building, i.e. what you can affect within your property boundary, and how it can provide both immediate and long-term benefits to you and your community. This also helps to solve the psychological and motivation barriers towards long term resilient planning. For instance, the farther away one gets from a major disaster, the less one is motivated to invest in resilient strategies like redundant HVAC or in backup generators to help toward the next disaster. The key question to overcome these barriers becomes, "How can resilience provide value in the short term during times other than disaster?" The answer lies in the synergistic value of energy efficiency with resilience. An energy efficient building should provide financial and human comfort benefits. A group of energy efficient buildings might create a microgrid that makes certain district energy technologies more financially viable, cheaper to build, or extendable to more buildings within the community. For instance, it would be cheaper to build a microgrid and district energy system for a group of 100 buildings that use 50% of the energy of their typical counterparts than it would to extend that service to 200 buildings. Being able to utilize these types of district systems can be inherently more efficient than individual HVAC systems, while simultaneously unlocking resiliency potential. Certain microgrid configurations can "island" from the utility during times of no power, thus increasing reliability and supporting sheltering in place during disasters for some or all buildings in the microgrid. That's the sweet spot for both energy efficiency and resiliency at the building community scale.

For this to happen we have to work together. For instance, it's really hard to do a microgrid on the scale of just a single building, even larger mixed-use towers. A certain amount of load diversity is needed to make combined heat and power technologies feasible.

Aron Chang is an urban designer at Waggonner & Ball Architects. He serves as project manager on a wide range of planning and urban design projects, including the finalist Rebuild by Design: Resilient Bridgeport proposal that a Gulf Coast-based and Waggonner & Ball-led team developed in 2014. He contributed to the 2013 Greater New Orleans Urban Water Plan as a primary writer, design team lead, and outreach coordinator. He is an interim steering committee member of the Greater New Orleans Water Collaborative, co-founder of the Blue House co-working space and collective, and co-director of Ripple Effect, a program that brings design and water education into New Orleans classrooms.

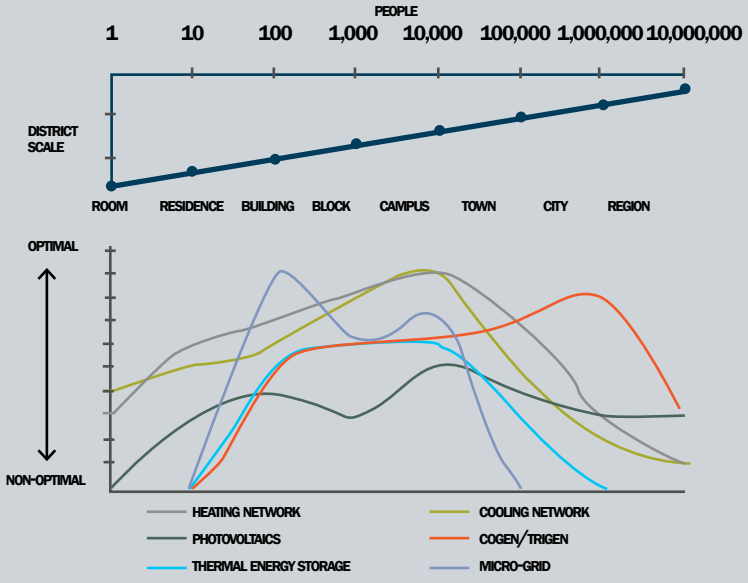
Mr. Chang joined Waggonner & Ball in 2011 after serving as a fellow at Louisiana State University's Coastal Sustainability Studio (CSS), where he coordinated planning and outreach efforts between the CSS and the Lower Ninth Ward Center for Sustainable Engagement and Development. From 2009 to 2010, he taught urban design and architectural design studios at Louisiana State University (LSU), both in the Robert Reich School of Landscape Architecture and in the School of Architecture. His teaching and design work at LSU focused on the intersection of planning, architecture, coastal resiliency, and sustainability. He also served as the architecture fellow for the Salvation Army's EnviRenew in 2009, an initiative to develop affordable and sustainable homes throughout New Orleans, and as an intern at Mia Lehrer & Associates, a landscape architecture firm based in southern California, where he worked on the 1,300 acre Orange County Great Park.

Mr. Chang received his Masters in Architecture degree from the Harvard Graduate School of Design, and graduated from Williams College with degrees in Studio Art and German.

This is why we see a lot of really successful microgrid projects in the University setting, which have a variety of uses close together all within the same property line. When we take that to the private world, even at the multiple-building scale, it becomes vastly more challenging to find the right mix of uses and to deal with utilities preventing the transmission and sale of power across property lines. This regulatory barrier can be tough to overcome, but that's a whole different story.

IA: When you talk about layers of redundancy, which is absolutely essential in all aspects of resilience, you talk about islandable power. Would islandable power still be the first option in your fall back from the grid? For instance, we traditionally have the grid. If the grid fails, then we have islandable power. If islandable power fails, then we have passive suitability. Should we reverse that thought if we want to hit sustainability and resiliency full on?

JD: Layers of energy redundancy, backup power, and passive survivability (or suitability) are all critical components of resiliency, and they should be viewed as an interconnected system. Interestingly, this is where the tension between energy efficiency and resiliency can originate from. Resiliency is about diversification and redundancy. Energy efficiency is about simplification and reduction. But the relationship between efficiency, microgrids, and islanding starts to assuage this tension. As I mentioned earlier, efficiency can be key to islanding from the utility grid, and reaching that ability means you also have low energy buildings. It's a win-win. This provides both a consistent financial benefit for owners and a resiliency benefit for the community during times of disaster. Compare this to the backup diesel generator, which is only useful 10% of the time. The last layer of resiliency is what you mentioned as passive suitability. Typically, only critical facilities within the microgrid can be kept 100% operational, but since the other buildings are efficient, they also have a better chance at passive survivability without any power. The design of high performance buildings designed with passive systems like natural ventilation should be a priority for this and other reasons. Eventually that other layer of backup power will not be fossil fuel. Efficiency helps with this transition as well, because a solar panel plus battery backup system becomes much more financially feasible with a low energy demand building. This type of scenario, has both immediate and long term resiliency benefits.



Above: Energy Systems Scales of Optimization: Image Courtesy of Eskew+Dumez+Ripple, Credit to Clark Brockman from SERA Architects in collaboration with ARUP San Francisco and Sherwood Engineers.

IA: You brought up two items that are very fascinating. One is innovation and the second is that innovation is not just the equipment, but what the equipment powers and usage patterns. Can you tell us what innovations are coming down the line that may impact efficiency that plays into resilience?

JD: Generally a lot of the technology is already available, so we don't have to wait for a technological silver bullet. We can achieve great lengths now by just changing the way we think about design. That being said, one of the most exciting technological directions is the rapid development of the micro CHP (combined heat and power) scale. A lot of the technologies are being developed by GE and some of the other players in the market. Think of the benefits of a pre-designed, micro CHP system that works on the single-family house or small office scale. When this market fully blooms, this could potentially be a game changer. This helps sidestep the regulatory barrier that I mentioned earlier -- delivering power across property lines. A lot of a municipal utility's structure do not allow any type of competition with the utility, i.e. generating and distributing power to you and your neighbors. Some places, like Connecticut, have gotten around this issue by allowing the municipalization of small-scale microgrids. Another option is to produce power for one high user, like a grocery store or swimming pool, and subsequently deliver chilled or hot water to other businesses. There are less regulatory barriers against this type of transmission, but this problem in general shows how complicated resiliency can be and how it requires integrated thinking at even the policy level. Smaller and smaller microgrid and combined heat and power technologies will be part of the solution.

IA: You work in New Orleans, so predictive future modeling plays into your deep retrofit strategy. Are you looking 50 - 100 years out when sizing equipment? And how do you use the predictive modeling of the future with climate change, i.e. natural disaster, extreme heat, extreme cold, and potential of high winds and hurricanes?

JD: This is a fantastic question and I don't think that the design community is having enough of these conversations with each other or our clients. We do a lot of simulation modeling based on typical meteorological year data that goes back 30 years. What we need to do is project climate change onto conditions in the future in order to understand the long-term impacts. I am aware of some research out there by firms like Overland out of San Antonio that create these types of climate files and make them available to the simulation community at large. Unfortunately there are a lot of different climate models out there with different projections. The trick is combining all of that together, coming up with something that we can use as a standard that is regionally, contextually specific, and then use that to inform our sizing implications for use diversification or flexibility down the road.

JP: Aron, can you give us a brief overview of some of the things you are working on, and the high points that you want to talk about?

AC: A lot of the work we do builds on the greater New Orleans Urban Water Plan. For example, in St. Bernard Parish -- directly adjacent to the Lower Ninth Ward of New Orleans -- we are working on an Integrated Water Resources Management Plan. We are also working on a neighborhood revitalization plan and streetscape improvement projects for Old Arabi, a neighborhood in St. Bernard Parish. These are projects at different scales, mostly in the realm of planning and urban design, that tie back to the urban design and water management principles that have come out of previous efforts at the regional scale.

JP: What have been some of the specific outcomes of the work you did on the Greater New Orleans Urban Water Plan? Is it policy, is it a proposal, and what role did you have in its creation?

AC: The Urban Water Plan was funded by HUD. The money came through the State Office of Community Development Disaster Recovery and the project was administered by Greater New Orleans, Inc., a regional economic development alliance. Waggonner and Ball led an international team composed of Dutch as well as Louisiana-based design and engineering firms. The source of funding for the Urban Water Plan is important because it's both why the plan is the way it is, a regional plan that deals with a three parish region, and one of the challenges that we are facing right now. Since it wasn't commissioned by the Sewerage and Water Board of New Orleans, the Department of Public Works or any of the municipal level entities, no entity is necessarily on the hook to implement the Urban Water Plan.

The document itself is powerful because it puts forth a set of ideas that are meant to galvanize municipal agencies, community members, non-profits and a whole lot of different actors working towards this shared vision. The process right now is to get a lot of different people on board and to find a way to actually implement the larger scale projects. In the last half year alone, we have seen more progress than we have seen previously in the last couple of years. Government agencies, such as the New Orleans Redevelopment Authority and the New Orleans Sewerage and Water Board, are buying into the plan and adopting the language and principles as part of how they do business. They are starting to make investments in green infrastructure and in more sustainable forms of storm water retention and detention instead of just investing in bigger pipes and bigger pumps. On the community side, I am involved with the Greater New Orleans Water Collaborative, which is an entity that brings together over 40 organizations and 100 individuals working towards transforming water management across the region, guided by the principles and strategies of the Urban Water Plan. Another program I'm working on, Ripple Effect, is funded by the Sewerage and Water Board and brings design and water issues into local classrooms.

IA: In terms of the water issues in New Orleans, what are some of the key components that will make the city more resilient in the future? Is there anything that impacts land use patterns or occupancy? Do they displace people or change land use?

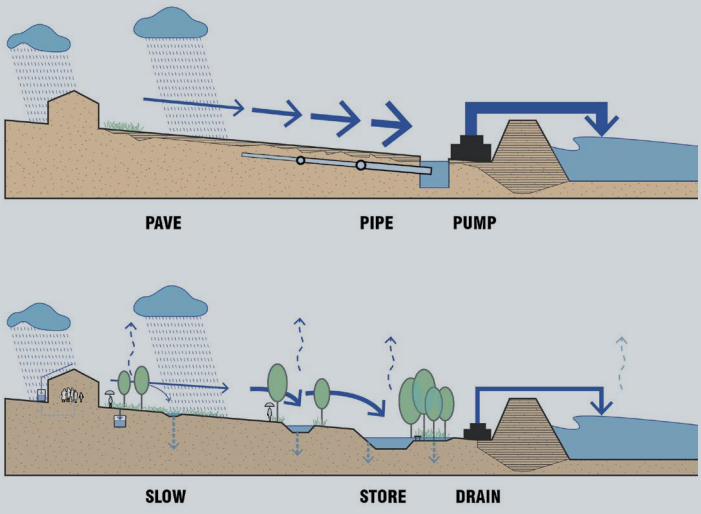
AC: The city is surrounded on all sides by water: the Mississippi River is on one side, Lake Pontchartrain and coastal wetlands are on all others. The region also gets over 60 inches of rain each year, making New Orleans one of the wettest cities in the whole country. The notion of learning to live with this water, instead of pumping it out as quickly as possible, is really fundamental to surviving and prospering in this region.

Through the last century and until now, the paradigm has been to pump the water out when it rains. But because so much of the city is built upon former swamp land, most of the soils are highly organic. When drained, those soils start to compress. When you add the weight of structures and roads, it causes them to sink even more. So over the last century, we have seen incredible rates of subsidence, with some areas losing 8-10 ft. in elevation. That process continues every single day.

IA: So subsidence occurring at the same time as sea level rises -- those two things combined are pretty serious. What are some of the solutions for making the city resilient?

AC: Policy, education, and outreach are key to helping the public understand that it is all linked. [When it's not raining] Most of the pumps are off and the water levels in canals are kept really low in anticipation of the next storm. We essentially have a system with a single purpose, and that is drainage. The canals and pipes fill up and the pumps are switched on in order to throw the water up and over the levees into the lake. This effort is tremendously expensive; we spend tens of millions of dollars each year pumping fresh water out of our city. And it doesn't acknowledge that groundwater is especially important during the days when there is no rain. The fundamental shift is thinking of our surface water, groundwater, and stormwater as all part of a single system, understanding that pipes and canals and the water in those features all communicate with the groundwater that is below us, and finding way to maintain higher water levels, when it's dry.
In order to keep subsidence from happening we need to have adequate storage and retention areas in addition to canals that we have to prevent flooding. If you double the size of all the pipes and the pump stations in New Orleans, you still wouldn't be able to solve the flooding problem that we have every time it rains hard; mathematically it is impossible to build our way out using the current paradigm. It only exacerbates the problems we have with subsidence. The critical solutions are: slowing down the flow of water through best management and practices, installing green infrastructure to reduce the volume runoff, creating system-scale water retention areas, and improving groundwater management. Water management is important for every city, but for us it is existential. We have to reduce runoff and provide more storage so we can actually raise water levels in our canals, balance groundwater levels, and slow the rate of subsidence.

JD: I just want to point out something about what Aron just mentioned. The Urban Water Plan is a great example of what we've been calling "N greater than 1 resilience" because water resiliency optimizes as it scales larger than the building. It illustrates how critical it is for the entire city to work together as a system to achieve some of the larger stormwater management goals. Some parts of the plan zoom in to actual business districts and propose sharing plots of land for surface water retention. Strategies like sharing stormwater and parking infrastructure can be absolutely critical to fixing our city's water issues while preserving more traditional business interests.



Above: Design principles of stormwater retention. Image Courtesy of Waggonner & Ball

IA: Do you see any way that the energy pieces that you are approaching at the community level tie into what is going to happen or what needs to happen with water management?

AC: The reason we spend upwards of tens of millions each year on pumping stormwater is because it takes tremendous energy to lift thousands of acre feet of water up 15 to 20 feet to dump it into the lake. We can continue to invest in building bigger and bigger pipes, and bigger pumps or we can invest that same money in retention rather than drainage. For a century we have been investing as much as we can in discharge systems rather than trying to solve the problem in other ways. We are always going to need our pumps -- close to half the city is below sea level -- but each of those pump stations are tied into the energy grid and have backup generators. The city's top source of carbon emissions are the pump stations.

JD: Conceptually, the idea of microgrids and increasing the efficiency of our pumping stations share some similarities. By lowering the demand on the storm system and dealing with it more through soft infrastructure on the surface, it ultimately slows the overloading of the pumping network and decreases its peak energy demand. This could reduce the size of the pumps, eliminate some altogether, or allow for alternative methods of powering the equipment. Looking at it from that kind of interconnected system is exactly the same thing that we do with energy. We lower demand first and that creates a multitude of benefits that trickle up the system.

IA: Is there any chance that new canals, basins, or holding areas, could include hydrothermal as part of the equation?

AC: We are not exploring the potential of hydro thermal installation or things like that at this time. But at the end of the day, if you are talking about moving and using larger volumes of water, you think about the iconic Dutch windmill. That's essentially an energy installation to lift water up and it is all about control. They are using that energy to lift water up to a higher canal. Once water is stored higher up, you have a source of potential energy. Then they can release that water and use that to drive the flow of water through the landscapes. Ultimately this is what we need to shoot for as well. We have differentials built in, like water that's higher in the river than it is in the lake and low lying areas where you have got to get the water out.

JD: There are lots of ways that water infrastructure can harmonize with energy and Aron's example is one of the best. Another idea from out West is the idea of incorporating micro-hydro into irrigation canals to help reduce peak demand, which has some application here in our stormwater systems. How great would it be if we could use the flow of water through our city to help run the pumps that help keep it from flooding? A third idea would be to use a stormater reservoir for both energy production, as Aron describes, and as a thermal battery. District-level HVAC systems could use the body of water as a heat sink or source through various water-source heat pump configurations.

Immediate Right: Backup Power Budgets for Phase I and 2. Image Courtesy of Eskew+Dumez+Ripple
Above Right: SPCA Phase 1. Image Courtesy of Eskew+Dumez+Ripple
Below Right: New System Framework. Image Courtesy of Waggonner & Ball

IA: So resilience is creating opportunities that are economically and financially viable for not just a city, state or region, but also for the individual or developer as well. It could be looked at that we must have resilience to protect ourselves, but we could also say, here are the opportunities that lie ahead of us.

JD: It would be hard to say that is the case for all resilience strategies. It's always going to be a case-by-case basis. Also, since resiliency efforts run a wide gamut, the biggest questions are going to be financial feasibility, unlocking preventative financing, and getting creative when thinking about financial value. How much do you value a shorter period of business interruption? How important is it to your brand? Is there a payback on hurricane rated glass? The answer and economic opportunity is in how you answer these types of questions.

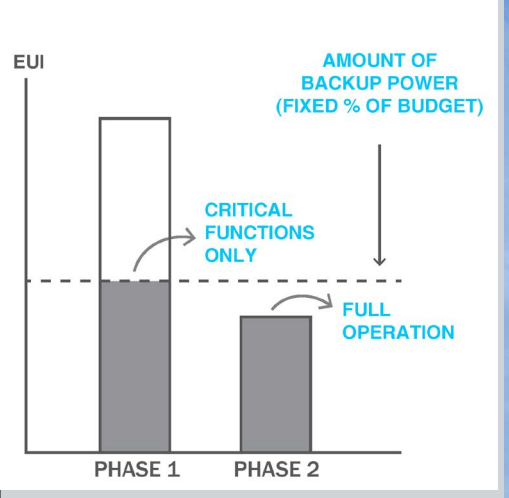
AC: The critical thing is always negotiating between systems and scales. Water is a useful lens to view resiliency, because it requires systemic approaches rather than one-off projects. We need a wholesale shift in how we think about groundwater and how we deal with water levels in our canals. At the same time the city is working on a new comprehensive zoning ordinance. In it, Article 23 is all about landscaping and landscaping plans for properties of a certain size and beyond. Developers will be required to have a landscape plan in which they show how the site will hold an inch and a quarter of runoff. That's completely new for this city. But as we move ahead, whether we are talking about solar power, or we are talking about water management, there is always going to be the negotiation between the role of the individual and whether or not they are going to see any benefits due their investments. The Sewerage and Water Board is going to try to institute a drainage fee, which also hasn't existed until now. Once you have a drainage fee in place, then you have the potential to care and fix the system. You can start talking about credits and incentives and provide an economic rationale for somebody to make an investment in stormwater management on their property. It is the policies first and then the economic and individual gains that can be derived from those policies. Without the contributions of individual homeowners, businesses, and institutions in terms of runoff reduction, we won't be able to do enough in just the public rights-of-way, in our streets and parks.

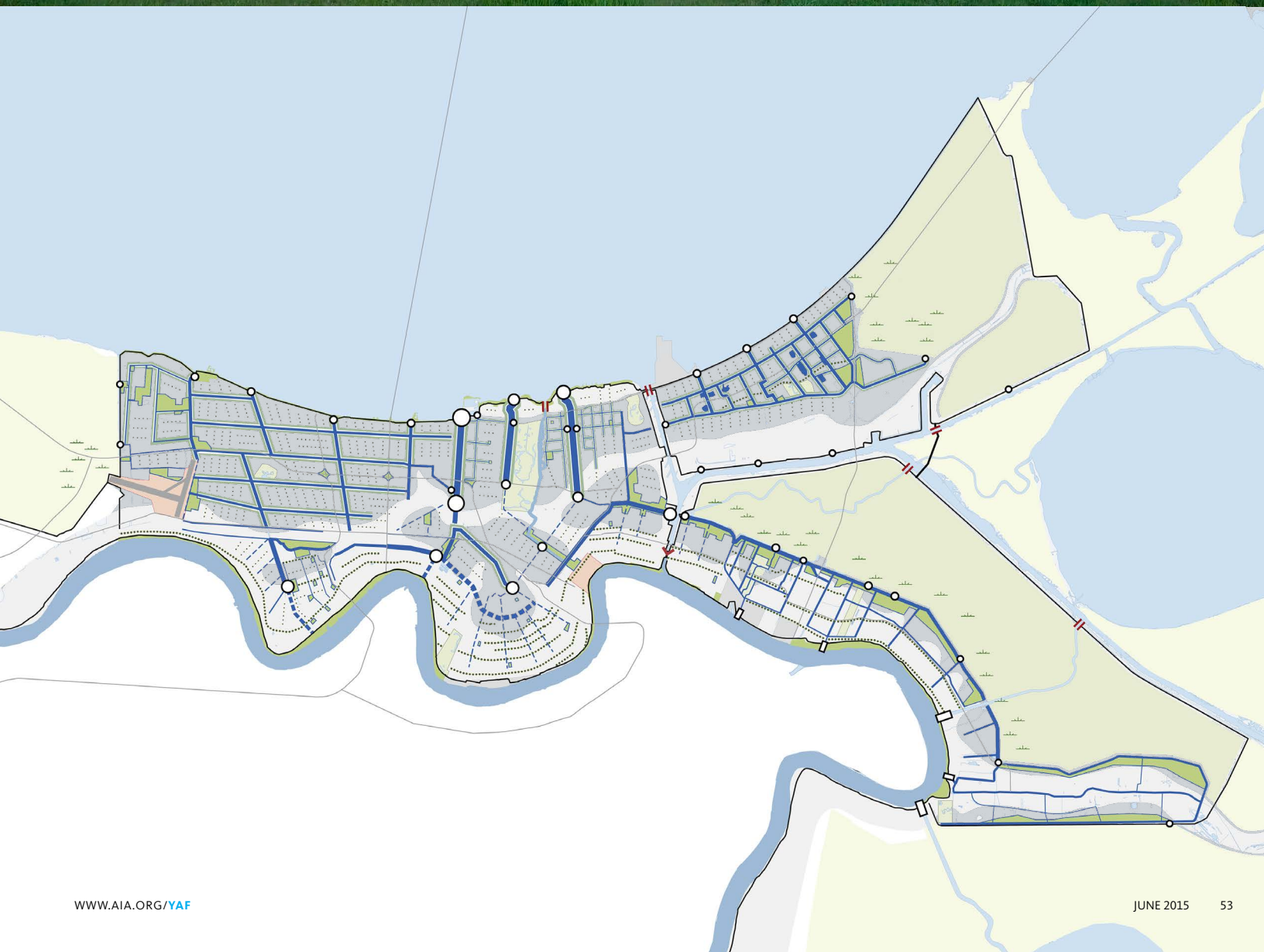
On a different note, we have looked at a lot at historical maps and images as part of our work in St. Bernard Parish. In regards to coastal resilience, there is a lot of talk throughout the delta and the coastal master plan about using diversions, making cuts in the river to allow water to flow into the marshes again, to replenish soils and freshen the marshes in order to fight saline intrusion. Diversions are controversial for a lot of different reasons, but they also hold great potential. There are old maps that show individual plantation owners, up and down the river, and mill owners who made cuts in the river levee to use the power of flowing water to drive sawmills. There is a tradition of the levee system being maintained by individual landowners, so that each person built their levee at the riverfront and connected up with their neighbors. Based on past relationships between landowners, water, power, flood protection, and industrial use, we might find healthier and smarter ways to manage our water resources in this century.

IA: It's nice to hear that architects are at the table and part of that very complex system. How do you suggest other architects get involved, not just in New Orleans, but city by city. Where do you see the opportunity for the future of the profession in regards to resilience?

AC: I want to talk about my boss David Waggonner. David and his business partner, Mac Ball, have been running the architecture firm [Waggonner & Ball Architects] for 30 years now. They have formed a wonderful architectural practice that focuses on historical preservation and institutional buildings (such as churches and schools) for decades. After Katrina, Waggonner and Ball was heavily involved in UNOP – the United New Orleans Plan -- and some of the other big planning efforts that were conducted to try to re-envision what New Orleans needed to be. What struck David was that even though the city had almost just been washed away, so many of the planning conversations were still about all the usual stuff: housing, transportation, cultural assets, etc. All well and good, but something was fundamentally off. It was because of that, that he started working on the Dutch Dialogues and reaching out to the American Planning Association, the Royal Dutch Embassy, connecting with Mary Landrieu and other key partners. This, in turn, allowed for the creation of the Greater New Orleans Urban Water Plan. The Dutch Dialogues model is built on the idea that expert architects, landscape architects, engineers and geo hydrologists from one area can learn from their colleagues in a related environment. The model is being used later this year as part of a workshop in Norfolk, Virginia. I've found David's work to be instructive because he saw that something was fundamentally awry with the built environment and the planning and design that was shaping the built environment. Rather than sticking with what he knew, he initiated a process in which he and everyone around him, have been able to engage in re-examining and re-imagining what planning and urban design look like in this region.

JD: The architect's role in resilience is getting stronger and stronger concerning the issue of resilience. Synergistically, architectural practice is becoming more concerned and interested in research. This provides an opportunity for architects to get more involved and start to bridge the barriers to interdisciplinary thinking within their firm. That is one of the primary reasons we have the Fellowship program at EDR. There are also a lot of grants coming out of the AIA, like the Latrobe Prize and Upjohn research grants. They are both great opportunities for firms to participate in research and explore the larger issues that affect our profession both directly and indirectly. The second part of my answer has been one of my big kicks upon graduating from school. We need to recognize that as architects, we have a lot of agency to deal with the energy issues of the built environment, but it is still primarily perceived to be solely within the scope of engineer. Architects have a key role in deeply technological issues like microgrids because the decisions we make about programming and energy performance will determine whether or not they are even part of the discussion. We are the ones working with planners on large-scale city moves. We are the ones educating clients about program uses and proximity early on in the project. The more we understand what we affect, the more impact we can make as architects on issues like energy resiliency. This idea that architects are responsible for energy relates back to an earlier part of the conversation: layers of redundancy and passive survivability. The idea that architects can design a building


EUI
AMOUNT OF BACKUP POWER (FIXED % OF BUDGET)
CRITICAL FUNCTIONS ONLY
FULL OPERATION
PHASE 1
PHASE 2



and integrate its massing, glazing, overall shape and orientation to reduce the demand on the building, deeply influences the energy systems of that building. For example, take the SPCA projects that our firm has designed. After Katrina, we built Phase One in six months in order to get them up and running as quickly as possible post Katrina. When we designed Phase Two, it was a comprehensive look at a high performance facility that could handle future issues and be a great place for animal adoption. Phase One has backup diesel power, but it can really only service a small portion of the facilities needs, mainly ventilation fans, partial lighting and a little bit of power for a cooling unit. But Phase Two was designed to use only half as much energy as Phase One and as a result, the same sized backup generator powers the entire building at full capacity. If the backup power fails, the building can be passively ventilated and has abundant natural light in all primary spaces. The energy concepts of passive survivability trickles up to the next layer and influences backup power. It then supports the idea of microgrids and islanding, which are all things that architects influence. Understanding these relationships is a key part of empowering architects to drive the design of our built environment.

AC: When we talk about resiliency, it is a web of issues that draw from design, engineering and public policy, but it's really about the shape that cities take in the future. The role architects play in describing new policies, whether it's in regards to insurance, flood plain management, what the ramifications of policy are, or the ability to draw or render in a recognizable form what different futures might be, are fundamental to what architects do every day. It's just applied at a different scale, describing landscapes and entire cities and coastlines. The drawings and representations we are able to make are tremendously powerful things for a community to react to, rally around, and to engage in making decisions around spatial qualities. It's a much easier entry point than talking about flood maps or different quantifiable factors that we sometimes use in talking about resiliency. That's a critical role, and something that architects can do better than those in other fields engaging similar issues.

Above Left: Rails. Image Courtesy of Waggonner & Ball
Above Top & Bottom: Lafitte existing and potential. Image Courtesy of Waggonner & Ball

JP: How do you feel that the uniqueness of New Orleans can translate to the Gulf Coast region and other cities? Are there similar issues, such as flooding, or are you using very unique ways of getting the water out of or keeping it in?

AC: When we do Dutch Dialogue in other cities, the point of the workshops is not to replicate the strategies. New Orleans has such distinctive soils that are the result of alluvial deposits over the centuries and the human inhabitation of that land. Miami, on the other hand, is built on limestone, and groundwater moves there in entirely different ways. In each instance there is a difference of conditions, but a fundamental way of looking at water issues: from the ground up. We can't talk about buildings or the streets, if we don't understand the underlying geology of a city. We start with our understanding of natural resources and then layer on the urban fabric and human inhabitation. If we don't understand what's below us, then we are going to have a hard time doing what's on top in a sustainable and resilient way.

Those ideas are transferable. In New Orleans in particular, the landscape is so screwed up. We have a city where close to half of the inhabited area is below sea level, we have so much flooding, we are losing our coastal wetlands at an appalling rate, we have poor water quality, we're wasting our fresh water and are using tons power in doing so. That makes this city and this region a great laboratory for developing technology, strategies and innovations that other cities will also have to use. Our environmental issues are pressing and existential, because things are so extreme, so vulnerable, so fragile. We have to figure these things out. ■

2015 LATROBE PRIZE

A CONVERSATION WITH PETER AND HADLEY ARNOLD

The 2015 Latrobe Prize, awarded biannually by the AIA's College of Fellows, went to a multidisciplinary team led by principal investigators, Peter and Hadley Arnold. Peter and Hadley are the research director and executive director, respectively, of the Arid Lands Institute out of Woodbury University. The research will specifically focus on the Institute's Drylands Resilience Initiative [DRI] and the digital tools needed for sustainable urban design for arid and semi-arid urban centers. The team selected was the first with a public entity as a principal partner. YAF Connection *caught up with the Arnolds at the AIA Convention in Atlanta to hear more about their exciting research.*

What does being awarded the Latrobe prize mean to both of you?

HA: The Latrobe prize is a game changer of an award in that it sustains our research and helps bring a really important message to our community, the American West, and the drylands around the world. We would like to thank the AIA College of Fellows for helping us get our message out.

Can you give us some background on the Drylands Resilience Initiative and how it differs from the Arid Lands Institute?

PA: The Arid Lands Institute is a research, education and outreach center that is housed at Woodbury University. ALI has work in rural watersheds and in dry urban locations such as Los Angeles. We have an extensive outreach component of our work, in an effort to get it out to the design professionals and beyond. One of the key objectives of ALI is to combine science and forward thinking policy with design to deal with water shortages in the American West.

What are some of the water shortage issues that the American west is facing that those in other parts of the country may not be aware of?

HA: All of us around the globe are facing a changing climate. The primary challenge we're facing is a reallocated hydrological cycle. What that means is for all parts of the world is that wet will be wetter, and dry will be drier. We've already seen that on the east coast; Sandy is one measure of the reallocated hydrological cycle demonstrating more intense storms, the risk of storm surge and rising sea levels. For the American West this means less snowfall, earlier snow melt, longer drought periods and the potential for less frequent but more intense rain events. We don't know exactly when we will have rain, we know that when we do have rain, we're going to need to grab every drop.

How do these issues relate to design?

HA: For the past 100 years, our cities in the American West have depended entirely, or almost entirely, on importing snow. We're a snowmelt driven society, we are a snow driven economy in cities like Los Angeles. We bring melted snow from the Colorado River, the Colorado Rockies and the Sierra Nevada via pumps and pipes to Los Angeles, San Diego, Phoenix and Tucson. If that snow is not there, we need to figure out a way to capture rain. Right now, rain is viewed as a threat or waste by way of storm runoff. How do we redesign a city or environment to make use of that rain? Right now that is the principal challenge to designers and is the principal objective of the Arid Lands Institute in its urban research.

PA: We also are trying to understand where opportunity exists in an urban fabric to capture rain and put it back into the ground. Our research includes the quantitative, economic, and social benefits and new innovations of urban form that could result if we had a more effective rain capture.

How do you determine which areas or cities would be most effective at implementing designs to recapture rainfall?

HA: Given the challenge of capturing rain in a city that has been designed to shed it and given the challenge of becoming less dependent on snow imports, we have issued a challenge to the design profession and design schools – How can we be more effective as designers of the built environment? We saw a need for a new curriculum, new preparation and a new practice model in order to prepare the next generation to design for a drier future. We also witnessed design practitioners who don't have access to information in order to make the best decisions quickly for a given site. If designers, developers and property owners don't have access to best practices on how to get water back in the water table on their particular site, then we can't expect a smartly built environment. The Drylands Resilience Initiative is developing the tools, framework, data and the policies to make it easier for architects and designers to make the right decisions for their projects.

How far along is the development of these tools?

PA: We have a working prototype and proof of concept. We will use the Latrobe Prize to further develop this tool to make it more user friendly, as well as, give it the ability to answer more sophisticated questions by applying metrics to a given scenario. The second goal of the equation is to communicate the outcomes to the design profession in order to find out what the profession needs to know. So, the next two years will be focused on tool development and then on communicating the results of the tool to the architecture and design profession.

HA: Proof of concept and tool development is ongoing. The tool is already showing us some significant public policy implications. We want to make sure that those policies find their way into the public sphere and into implementation. Specifically the tool is telling us that there appears to be three distinct hydrologic zones in Los Angeles. These zones could literally perform as an overlay for planners in the LA basin. These zones locate the high priority areas for replenishing ground water, the areas where we would not want to infiltrate due to contamination risks, where we want to capture and convey, and zones where we should capture water and treat on site.

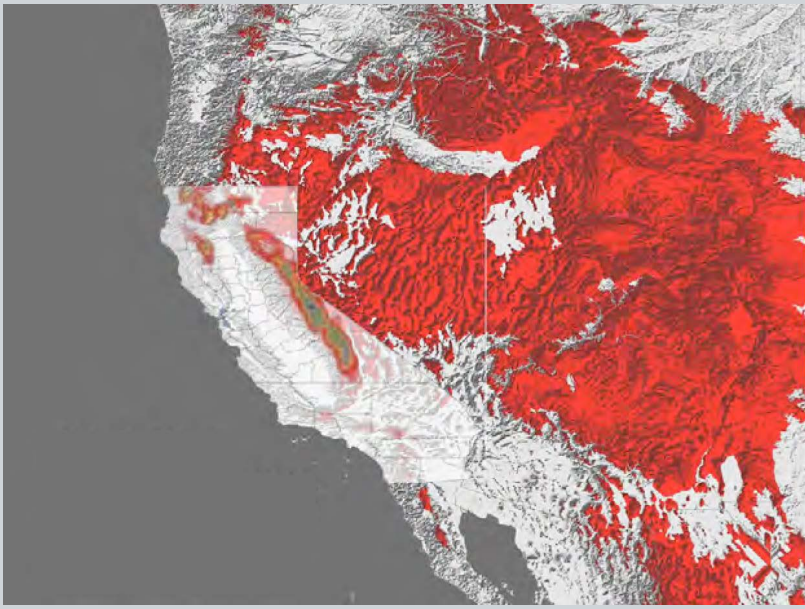
Can you expand on the importance of public policy that you just touched on?

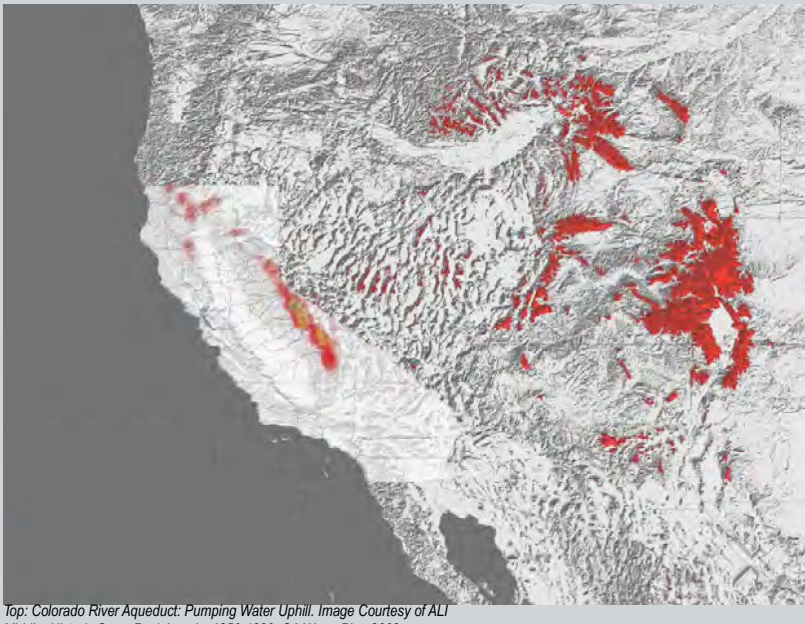
HA: Pathways to public policy is a major part of this early stage. And we don't have to wait until the tool is completely developed in order to do so. This is especially important because Los Angeles is experiencing a really critical moment. We're re-writing the zoning code for the first time since 1946, and if we can provide data driven research that influences the outcome, we have a huge opportunity to tackle climate change head on. We're working with Arup on scaling this to various infrastructures. Perkins + Will is going to work with us on making the tool usable by design teams. The City of Los Angeles Bureau of Engineering will be looking closely at how we make this as accessible as possible to the public. The Latrobe Prize is important seed funding for what will become a much larger enterprise which is: How do you govern water? This is not just about fixing a problem, but also about how do we make a great space.

Can you explain the role resilience plays in your research?

PA: The common definition of resiliency is the ability of a natural system to return to its previous state, given a change in its environment. Our work is not necessarily about resiliency. It's about anticipating how cities, economies and the built environment need to change and not return to pre-stress states given the challenges of climate change. What we've seen is that if we return to those pre-stress states, i.e. relying on imported water supply and shedding storm water runoff instead of capturing it, we're doomed as a society in arid areas. Not just in the US, but globally as well. Resiliency may need to be redefined to understand what forces are causing this change and then how we better respond to those changes. We need to become more adaptable given our present situation.

The second thing I really want to stress is that once we know how to make a better performing city, how to change building code, how to make building systems more efficient in regards to water usage, we will then have to focus on how these changes will effect the urban system both economically and socially. Our work is more about evolution and adaptation then just being resilient to climate change.





Top: Colorado River Aqueduct: Pumping Water Uphill. Image Courtesy of ALI
Middle: Historic Snow Pack Levels, 1850-1990, CA Water Plan 2009.
Bottom: Projected Climate Impacts on Snow Pack Levels, 2010-2060, CA Water Plan. GIS Analytic Images Courtesy of ALI

FEATURE

San Fernando Valley Basin:

The San Fernando Valley basin [approximately 200 sq miles] lies within the Upper Los Angeles River Watershed. Cities within the focus area depend largely on imported water supplies:

City of Burbank:
49% imported sources, 51% local sources

City of Glendale:
70% imported sources, 30% local sources

City of Los Angeles:
88% imported sources, 12% local sources

The City of San Fernando is the only exception, where imported supplies are sued to supplement groundwater resources.

Surface Run-Off Model:

Computes annual urban stormwater runoff derived from 30-year annual precipitation data coupled with impacts of ground surface impermeability within the San Fernando basin.

Annual Stormwater Run-off Volume

low volume

high volume

Resultant Analysis:

Combines infiltration model [assessing the soil types and conditions for infiltrating stormwater] with a constraint model [assessing risks associated with both surface and subsurface chemical contamination] to describe the suitability for safely infiltrating stormwater runoff within the San Fernando Valley basin, and pinpoints appropriate strategies for resource recovery within the basin. Three case studies are identified [at right].

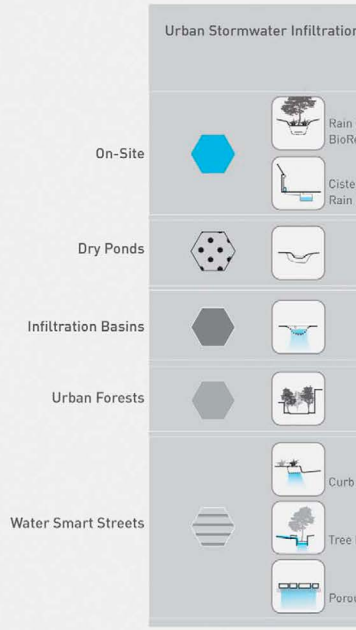
Suitability Score for Safe Stormwater Infiltration

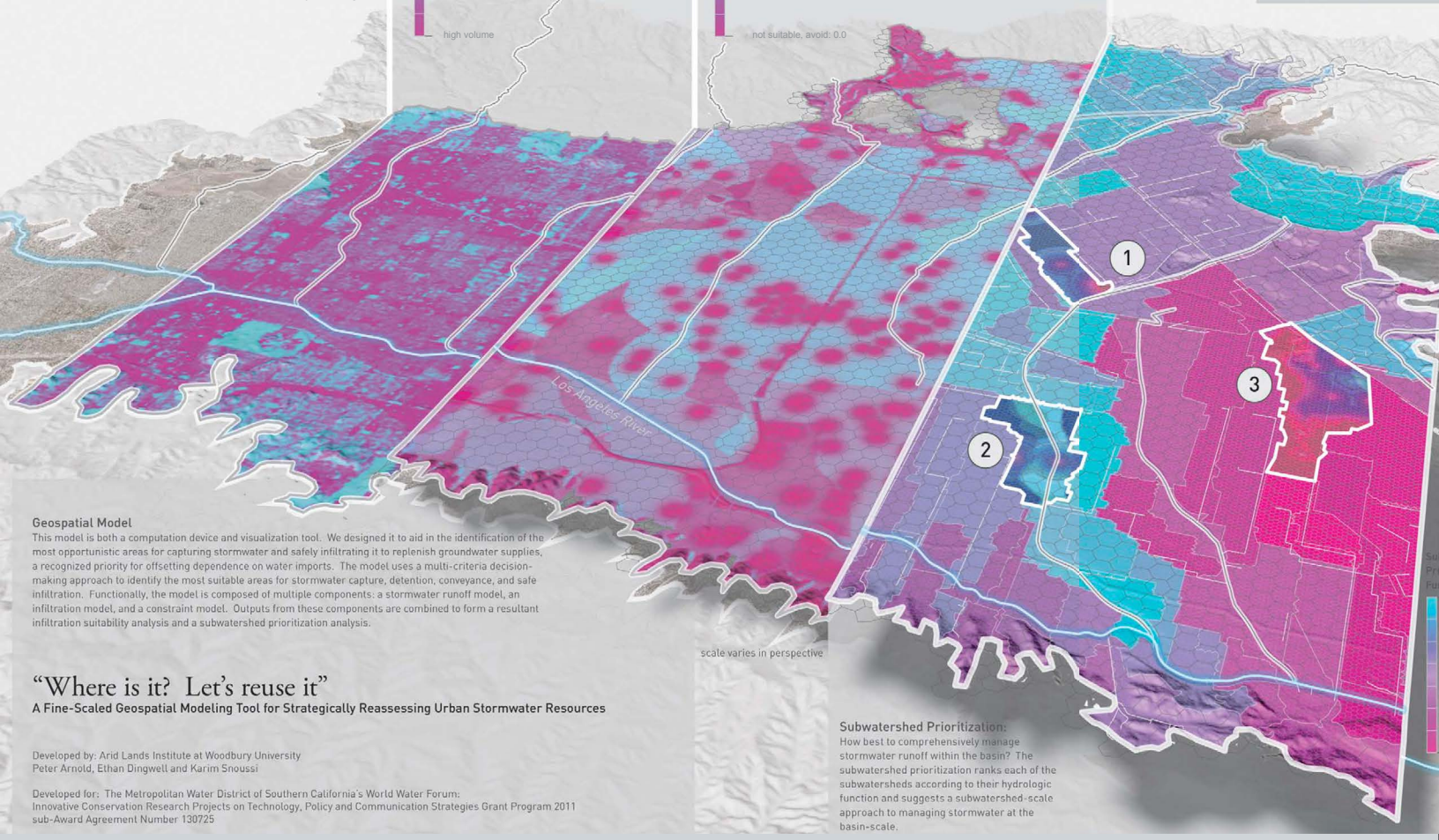
highly suitable: 1.0

moderate suitability: 0.8

very low suitability: 0.5

not suitable, avoid: 0.0





Geospatial Model

This model is both a computation device and visualization tool. We designed it to aid in the identification of the most opportunistic areas for capturing stormwater and safely infiltrating it to replenish groundwater supplies, a recognized priority for offsetting dependence on water imports. The model uses a multi-criteria decision-making approach to identify the most suitable areas for stormwater capture, detention, conveyance, and safe infiltration. Functionally, the model is composed of multiple components: a stormwater runoff model, an infiltration model, and a constraint model. Outputs from these components are combined to form a resultant infiltration suitability analysis and a subwatershed prioritization analysis.

scale varies in perspective

"Where is it? Let's reuse it"

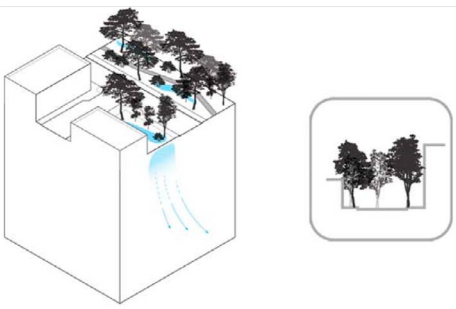
A Fine-Scaled Geospatial Modeling Tool for Strategically Reassessing Urban Stormwater Resources

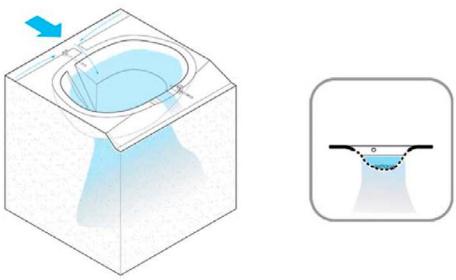
Developed by: Arid Lands Institute at Woodbury University
Peter Arnold, Ethan Dingwell and Karim Snoussi

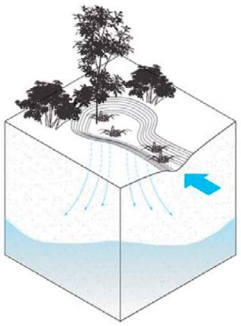
Developed for: The Metropolitan Water District of Southern California's World Water Forum:
Innovative Conservation Research Projects on Technology, Policy and Communication Strategies Grant Program 2011
sub-Award Agreement Number 130725

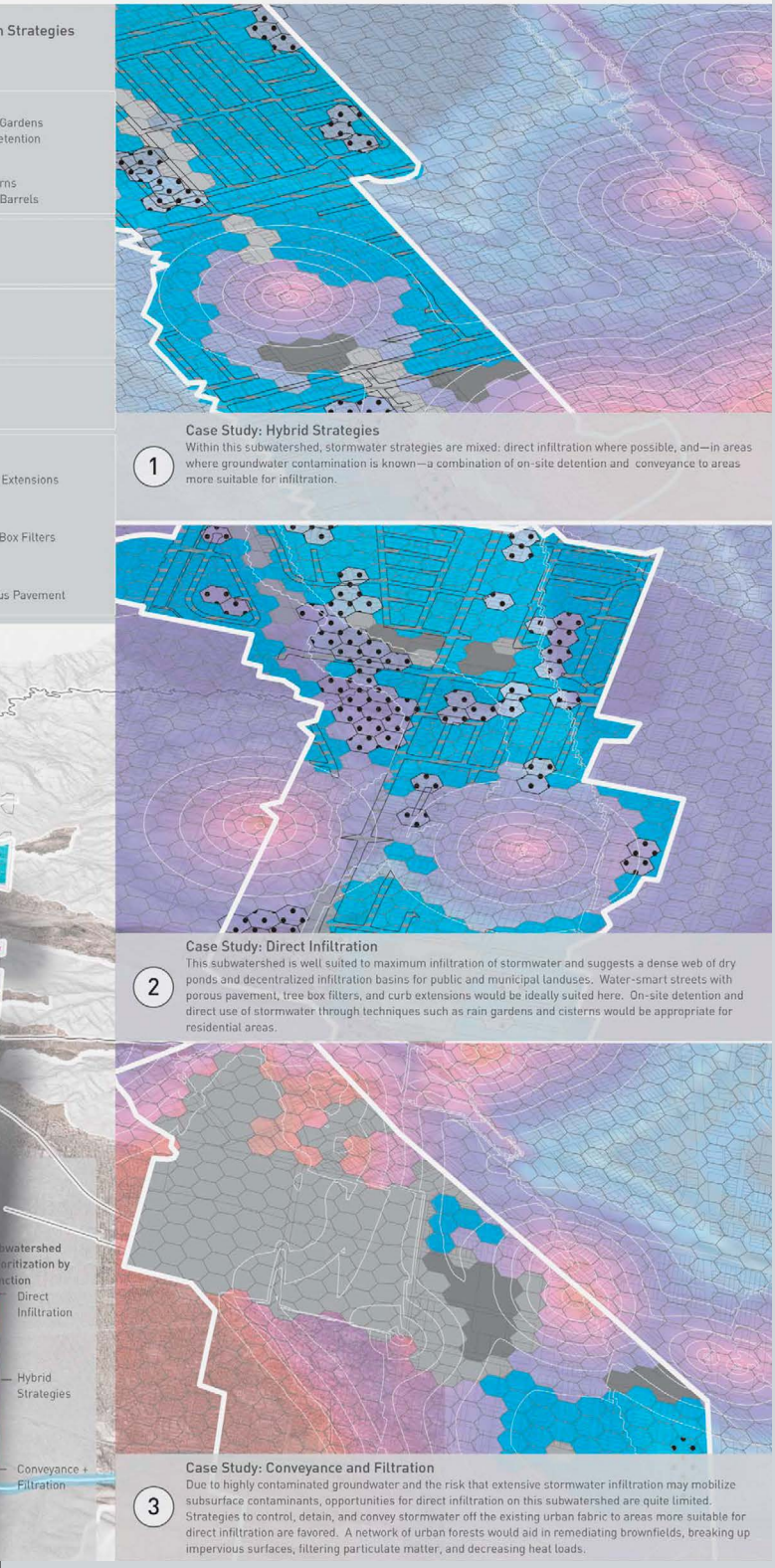
Subwatershed Prioritization:

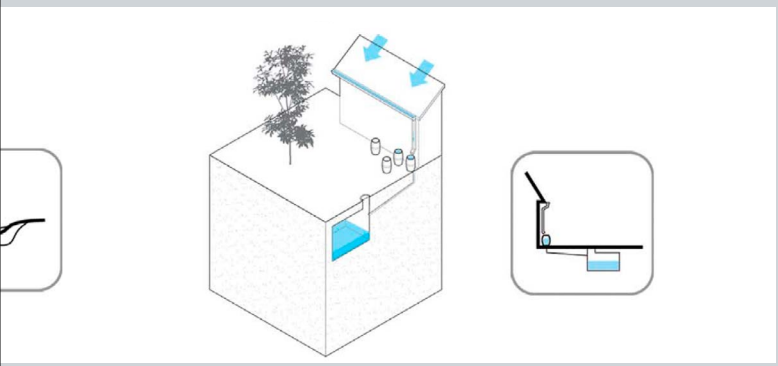
How best to comprehensively manage stormwater runoff within the basin? The subwatershed prioritization ranks each of the subwatersheds according to their hydrologic function and suggests a subwatershed-scale approach to managing stormwater at the basin-scale.











What is the relationship between Woodbury University and The Arid Lands Institute?

HA: We were chartered at Woodbury University as a research, education and outreach arm. We serve undergraduate and graduate students as full participants in the research we were conducting. We see this as an innovative means of education because students see the public benefit as a direct result of the research they participated in. Gradually, the work has taken on an intense enough focus that our principal educational track has become a one-year post-professional degree. Students join us for a one-year thesis, a Masters of Science in Architecture (MSArch). Those students are getting a heavy dose of science, policy, geo-spatial design and communications.

PA: The curriculum innovation is huge in that there is potential to change the profession, at least in how designers are trained. We would like to see that be embraced by other schools, and develop partnerships between schools so that the curriculum can be shared. It's our view that education is designed to serve everyone, so we're looking at ways to make that idea more accessible.

It can be argued that the design profession has not been asked to solve the central problems of our time and when they are asked to participate in solving these problems they are brought in at the end of the process. That doesn't do the architecture profession any good. There is an opportunity here to change the education of architects to enable the next generation to provide the types of solutions that are needed at present. We believe there is a reawakening of urgency of design as not just a formal expression, but as a thing that functions, has social relevance, economic impetus and has deep environmental logic to make the world better for people. ■

Acknowledgements

Arid Lands Institute co-directors Peter Arnold and Hadley Arnold lead a team that includes Rowan Roderick-Jones, CSci, ENV SP, Associate, Water Systems Group, ARUP, San Francisco; Deborah Weintraub, AIA, LEED AP, Chief Deputy City Engineer, Bureau of Engineering, Department of Public Works, City of Los Angeles; Leigh Christy, AIA, LEED AP BD+C, Associate Principal, Perkins+Will, Los Angeles; and John Haymaker, AIA, Ph.D., LEED AP, Director of Research, Perkins+Will, Atlanta.

Top Left: A Fine-Scale Geospatial Modeling Tool for Strategically Reassessing Urban Stormwater Resources. Image Courtesy of ALI, Peter Arnold, Ethan Dingwell, Karim Snoussi
Left: Strategies for Capturing and Infiltrating Urban Stormwater, left to right: Urban Forests, Infiltration Basins, Dry Ponds, On-Site Detention. Source: U.S. Environmental Protection Agency. Image Courtesy of ALI, Ethan Dingwell,Karim Snoussi

HARRIET TREGONING

A CONVERSATION WITH HUD'S PRINCIPAL DEPUTY ASSISTANT SECRETARY

HARRIET TREGONING *has been called a "rock star of urban planning." She currently serves as the Principal Deputy Assistant Secretary (PDAS) for the Office of Community Planning and Development in the Department of Housing and Urban Development (HUD), promoted from director of HUD's Office of Economic Resilience. Prior to all the federal acronyms, Harriet served as the Director of the Office of Planning for the Washington, D.C., and is credited for helping create the walkable, bike-able, sustainable city the District has become.*

As PDAS for the Office of Community Planning and Development Harriet oversees a budget of roughly $6 million, forty field offices, and a number of national programs, including HUD's current focus on resiliency planning for communities around the country. She is currently heading up the $1 billion National Disaster Resilience Competition being run in conjunction with the Rockefeller Foundation. The competition hopes to net executable ideas for resilience planning in communities throughout the country that can be replicated in other cities in the years to come.

JP: Resilience can be a challenging topic for many in the design community because of its wide range of aspects. How do you define resilience?

HT: I don't think there is a precise definition. It involves quality of a place, building, household, and to be able to not just withstand the shocks or stresses of a sudden event but to quickly bound back or even bounce forward from that event.

JP: How do you balance broad housing policy with regionally specific resilience needs?

HT: I think these things are kind of tied. Talk of scale. Housing policy is one of those things that is thought of as minutely focused on neighborhood or city. Housing markets are regional, though. Housing policy is best implemented regionally as well. It ends up being a pretty easy conversation and connection to have. You want the housing to be located in a place not particularly vulnerable to both natural and economic disasters. Proximity to employment and public transportation are also key.

You need multiple routes of egress to flee from a disaster as well. We don't want another situation like Houston after Hurricane Ike – some of the largest highways in the country were choked with people trying to evacuate. Another example is the earthquake we had in 2011 in Washington, DC. There were massive traffic jams because all federal workers were let out of work at the same time. But Capital Bikeshare and bicycling were faster and safe. Options are important.

JP: You mentioned regionalism. How do you get regional policy in place when it crosses state or municipal boundaries?

HT: In any part of the country, it's a matter of cooperation and persuasion, and in some cases imitation. Adopting what works well in neighboring jurisdictions. Learning by doing. There are strong economic arguments to organize within a region – policies work better when there are ties of collaboration for cooperation. I believe there was a term coined for this – "Coopetition" – maybe a few years ago in Charlotte – when cooperation and competition leads to higher level of success.

JP: How much of your work ties into cities that currently have a Chief Resiliency Officer (CRO)?

HT: If they do have a CRO that's a great thing, but I'm not deliberately acting with those specific cities. We work very close with the Rockefeller Foundation on the competition to raise the literacy of what it means to be resilient. Don't overlap a great deal. Only 17 localities are even eligible to compete.

JP: Can you tell us more about the competition, and where it is in process?

HT: Phase 1 of the competition concluded in March with Phase 1 applications. There will be an announcement of who will proceed within the next couple months. Phase 2 is an invited competition. Projects must be feasible and some will be funded. The Rockefeller Foundation gave $5 million for the first round. We anticipate they will be involved with the second phase as well. We are looking at the end result as something in which everyone who participates is going to get something out of, including blueprints for how to make jurisdictions more resilient. But there is lots more money given to these projects by municipalities regularly. We are hoping they learn how to spend more wisely.

We are encouraging a process of design thinking – think about processes and approaches, risks and aspirations. What is the design solution that would meet those multiple objectives? Not just meeting the results of the last disaster that can be just slapped up. Help people see, imagine, and execute how you solve all these problems with the right design.

JP: Is there a plan for publicizing the competition winners?

HT: This competition was undertaken with a great spirit of optimism, but we are totally unsure of the outcome. That's why we are awarding grants at all scales - from $1 million all the way up to $500 million. We don't yet know the scale of the projects that will win, so we're not sure yet how best to publicize the winners. The process has been very engaging to the applicants. Lots of visible changes in thinking through the process.

> *There isn't enough literacy when it comes to design. The general public thinks of design services as for the wealthy. John Peterson – the founder of Public Architecture – noted the ability to draw and visualize multiple solutions has great potential.*

JP: For areas of the country that haven't identified resilient design as a priority, how do you convince them? Is it difficult in areas that haven't had a recent disaster recovery effort?

HT: It's a similar question to planning in general. Planning is thinking about the future, but not just twelve months from now. It's ten, twenty years or more into the future. It's highly likely that every place will be effected by changing climate and frequent weather events. The stakes are higher than they have ever been to effectively plan for the future. We also need to address demographic change in addition to climate change. We have a greatly aging population. There is economic restructuring everywhere. Infrastructure has changed drastically. Our future will be drastically different than our past. We need to design for adaptation, and design for multiple benefit, for multiple futures, or design projects to be obsolete on purpose to be taken over by something else in the future. That's an option we don't often consider.

JP: How have you been able to combine passions for community driven planning and the needs of resilience? Are they natural partners or do they ever counteract each other?

HT: They are both conversations about the future. I love that part of planning. You get to be in charge of imagining the future and showing people trends. Same conversation, different specifics.
Resilience should never be its own thing. This is part of how you go about planning for the future. It should be a part of every capital budget and every long term business plan. It must be integrated into what we do.

JP: What are the primary backgrounds of the resilience leaders you interact with? I.e. architects, planners, politicians. Is it a position that needs to balance numerous skills or does one field have an advantage over the other?

HT: Design professionals have an advantage. Designers can solve multiple problems with one solution. Imagination and visualization are important.
Leadership for these efforts needs to come from many places - elected officials, community-based neighborhood organizations, and the business community. A broad cross-section of organizations and individuals are needed to provide continued demand and support for efforts through political transitions.
After a natural disaster, Congress approves money for disaster recovery. People seek to rebuild reflexively exactly what was there. It's a missed opportunity to show people how things can be different. Communities could be prepared to bounce forward with recovery funds. Solutions should by design help communities to achieve their daily aspirations. Those are the solutions we want – good design solutions.
We need solutions that solve multiple problems. I think it was Winston Churchill after World War II who said, "Gentlemen we are out of money. Now we have to think." We need our infrastructure to do more. 760 cities have combined sewage overflow. Cities are about 30% roads – circulation and publicly-owned. Why not make the circulation the armature for water and sewage systems? Why can't you use that at the mainstay as your storm-water management system? Rate payers could become the funding for road improvements.

JP: What is the largest impediment to moving forward? How much do politics and/or educating the public play a role?

HT: At the moment, there are a lot of places that are not thinking about the issue. They are doing what they have always done. Coastal cities are not considering sea level rise. Certainty and the magnitude of the impacts are becoming more real to people, but not everywhere. I am hoping the competition will increase awareness. It could become a point of shame if they aren't thinking about these issues as then plan.
It's not all or nothing, though. Time is a very important dimension to this conversation. Waterfronts may change. It may mean more good things – publically accessible waterfront, protection from extreme weather, etc. on days with no weather event for the future.

JP: What are some of the responsibilities of your new role, and how does resiliency planning play a part in that role?

HT: I'm very excited because I get to keep doing this work. The competition remains part of my portfolio. The resiliency work is starting to inform other work of HUD. We can encourage our grant recipients who work on infrastructure projects to plan the infrastructure better. We will focus on communication on how to use the money more effectively with better outcomes, not just as disaster recovery money.

JP: What advice would you give to Young Architects seeking to take a more active role in resilience planning?

HT: Focus on literacy when it comes to resilience. There isn't enough literacy when it comes to design. The general public thinks of design services as for the wealthy. John Peterson – the founder of Public Architecture – noted the ability to draw and visualize multiple solutions has great potential. The magic of showing people what it could look like if it were trying to make the community look more beautiful, more livable, and provide more amenities - that is powerful.

Design thinking and visualization is missing from a lot of problems and situations where it could be immensely helpful.

Click *HERE* For more information on the National Disaster Resilience Competition.

Jon Penndorf, AIA, LEED AP BD+C
is a Senior Associate and Sustainability Leader for the Washington, DC office of Perkins + Will. He was the 2014 Chair of the AIA Young Architects Forum and currently serves on the AIA Committee on the Environment (COTE) Advisory Group.

CONNECTION

THE ARCHITECTURE AND DESIGN JOURNAL OF **THE YOUNG ARCHITECTS FORUM**

2015 EDITORIAL CALENDAR

FEBRUARY
RETROSPECTIVE

This issue focuses on the theme of **LEADERSHIP.**

Featuring architects, designers and emerging professionals who have made an impact on the profession early in their career in leadership roles. We will explore how their service has helped them to succeed and where their careers have taken them.

APRIL
EQUITY x DESIGN

This issue focuses on the theme of **EQUITY IN ARCHITECTURE**.

Featuring architects, designers, and emerging professionals who have made an impact on the profession in leadership roles. We will explore the data from the Missing 32% Project, the Equity by Design Conference and anecdotal stories of leaders who are advancing equity in the profession.

JUNE
AHEAD OF THE SURGE

This issue focuses on the theme of **RESILIENCE**.

Featuring architects, designers and emerging professionals that are changing the face of the profession. We will explore how architects and specifically emerging professionals are leading the effort in resilient design across the globe.

AUGUST
STATE OF PRACTICE

This issue focuses on the theme of **EVOLVING BUSINESS MODELS**.

Featuring architects, designers and emerging professionals who are fundamentally changing how we conduct business, strategy and structure our firms. We will explore how the state of practice has evolved, what the key resources are and how it will change in the future.

OCTOBER
TACTICIAN

This issue focuses on the theme of **URBAN AND PRO BONO DESIGN**.

Featuring architects, designers and emerging professionals who are affecting the built environment as a whole, while keeping an eye on socially conscious design. We will explore city design issues, including urbanity, demographics, affordability and the human condition.

DECEMBER
COLLATERAL CREATION

This issue focuses on the theme of **GERMINATION**.

Featuring architects, designers and emerging professionals acting as environmental stewards through initiatives in sustainability and the future of education. We will explore advancements in innovative programs aimed at creating a sustainable future and profession.

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u are interested in contributing to NECTION, please contact the Editor-ef at **jpastva@gmail.com**

HERE for past issues of
NECTION

SUBMISSION REQUIREMENTS

All submissions are required to have the attachments noted below.

Text
Submit the body of your text in a single, separate Word document with a total word count between 500-1000 words.

Format the file name as such:
[yourlastname_article title.doc]

Images
Submit all images in JPEG format at a minimum resolution of 300 dpi RGB mode. Include captions to all images in the body of your e-mail transmittal.

All images must be authentic to the person submitting. Do not submit images with which you do not hold the rights.

Format the file name(s), sequentially, as such:
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Author Bio
Submit a brief, two-sentence bio in the following format:

[yourlastname] [AIA or Associate AIA or RA] is a [your title] at [your company] in [city, state]. [yourlastname] is also [one sentence describing primary credentials or recent accomplishments].

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Author Photo
Submit a recent headshot in JPEG format at a minimum resolution of 300 dpi grayscale in RGB mode.

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WHAT IS THE YOUNG ARCHITECTS FORUM?

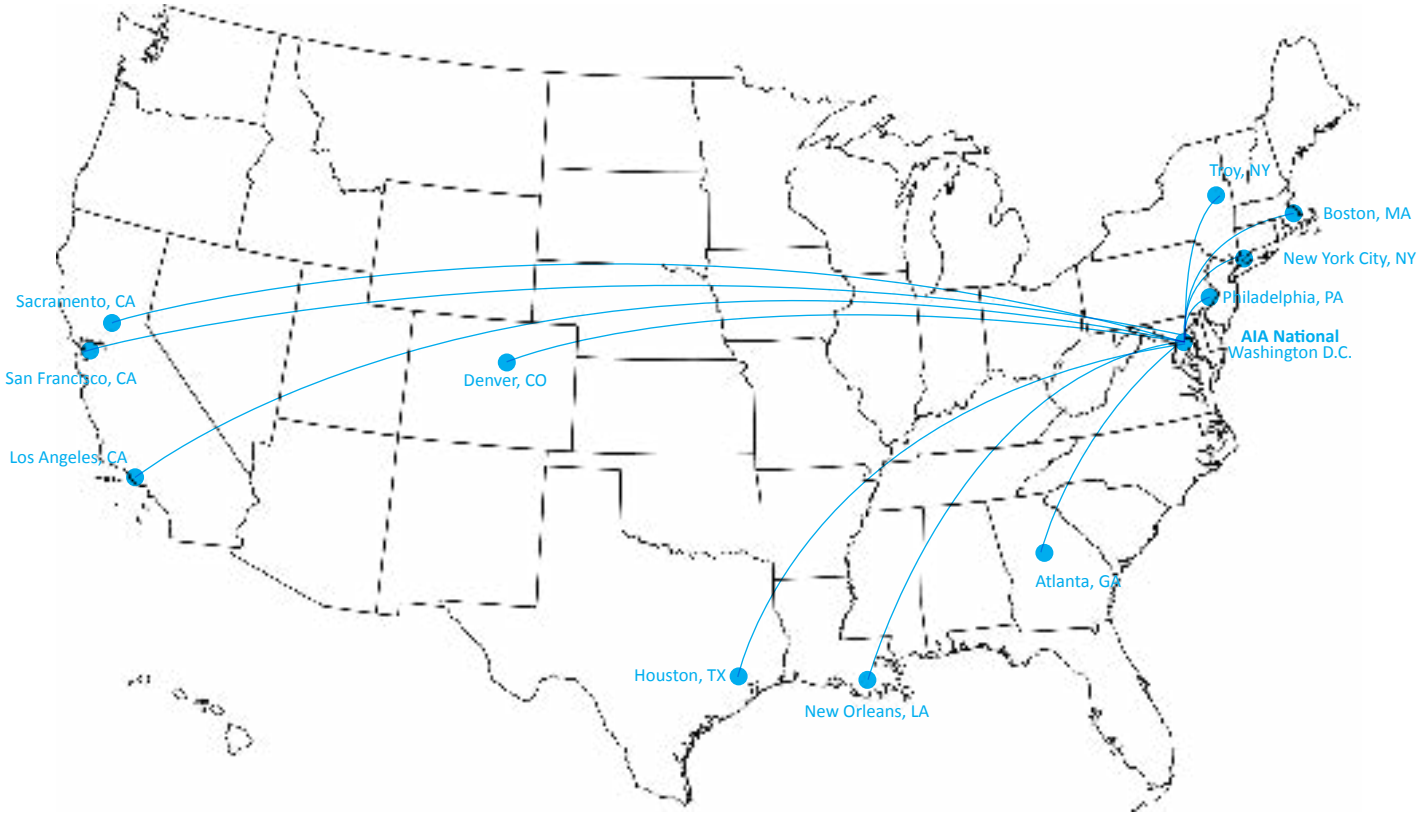
The Young Architects Forum is the voice of architects in the early stages of their career and the catalyst for change within the profession and our communities. Working closely with the AIA College of Fellows and the American Institute of Architects as a whole, the YAF is leading the future of the profession with a focus on architects licensed less than 10 years. The national YAF Advisory Committee is charged with encouraging the development of national and regional programs of interest to young architects and supporting the creation of YAF groups within local chapters. Approximately 23,000 AIA members are represented by the YAF. YAF programs, activities, and resources serve young architects by providing information and leadership; promoting excellence through fellowship with other professionals; and encouraging mentoring to enhance individual, community, and professional development.

GOALS OF THE YOUNG ARCHITECTS FORUM

To encourage professional growth and leadership development among recently licensed architects through interaction and collaboration within the AIA and allied groups.

To build a national network and serve as a collective voice for young architects by working to ensure that issues of particular relevance to young architects are appropriately addressed by the Institute.

To make AIA membership valuable to young architects and to develop the future leadership of the profession.



GET CONNECTED PUT YOURSELF ON THE MAP

THIS ISSUE FEATURES CONTRIBUTING ARTICLES FROM THESE MAPPED LOCATIONS.

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I AM AIA
I AM AIA

Jennifer Rhoades, Assoc. AIA
Member Since 2012

Sam Garcia, AIA
Member Since 2009

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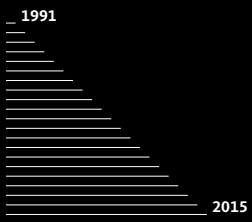

YOUNG ARCHITECTS FORUM

CELEBRATING **24** YEARS OF ADVANCING THE CAREERS OF YOUNG ARCHITECTS