

Connection

The architecture and design journal of the Young Architects Forum

2021

Q1

Vol. 19
Issue 01

This issue: **Climate Action**

How does the architectural industry ignite action in climate action? Emerging professionals are charged with the belief there has never been a better time to tackle climate change. Many have set out to find approachable ways to make personal and collective impacts in climate action through advocacy, research, technology and leadership.

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**The American
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Connection is the official quarterly publication of the Young Architects Forum of AIA.

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Editor's note:

If the whole is greater than the sum of parts

I am deeply honored to step into my first year as the Young Architects Forum Communication Director. I enthusiastically hope to build on the great work and legacy of past Connection editors-in-chief. Over three years ago, I strived to achieve a career milestone of becoming licensed, and I found myself shortly afterward asking the all too common question for many young architects across the nation, now what? Eager to make a sustainable impact, I joined the Young Architects Forum as the Young Architect Regional Director for the Mid-Atlantic region. This opportunity connected me to a national enclave of equally driven young architects tackling some of the most challenging and constantly evolving issues. Whether it is climate action, citizen architects, justice, equity, diversity, inclusion, or practice innovation, the Young Architects Forum is committed to leaning into these topics with passion, nimbleness, and an emphasis on sharing ways emerging professionals can leave an impact.

Our first quarter focuses on climate action. A critical role in our cumulative efforts in climate action is driven by relativity. Each one of us is called to make an impact. However, what that may look like in scale or approach may be unique to our resources available, circles of influence, culture, and geography. The resolution to address climate change is multifaceted. It draws on parallels and synergies of being a citizen architect, justice, equity, diversity, inclusion, and practice

innovation. It is no secret that climate change disproportionately affects BIPOC communities and people who are most vulnerable. These can often be influenced by policy, and hundreds of architects showcased our role at the AIA Grassroots conference earlier this year. We advocated for our lawmakers to create and build legislation for climate action. In tandem, new practice models and technologies are helping us find new ways to combat the challenges of climate change through design. Now more than ever, our industry is calling to bring these issues front and center to develop meaningful ways to swing the pendulum to cleaner, greener, and more sustainable built environments.

In this issue, you will find thought pieces, as well as actionable and accessible ways designers, architects, and allied professionals across the nation, shared to do their part in championing climate action. Aristotle once said that the “whole is greater than the sum of parts.” The diversity of topics from sourcing sustainable materials, water conservation, leveraging technology, soft skill development, and more showcase how climate action solutions are multifaceted. While this is not a small, simple, or quick endeavor, our contributions can create lasting change because of our holistic and unified efforts. I encourage you to consider taking one or two ideas from this issue and applying them to your practice, daily life, or personal conversations.

Editorial committee call

Q2 2021:

Call for submissions on the topic of citizen architects, civic engagement, mentorship, and young architect awards.

Connection's editorial committee welcomes the submission of articles, projects, photography, and other design content. Submitted content is subject to editorial review and selected for publication in e-magazine format based on relevance to the theme of a particular issue.

2021 Editorial Committee:

Call for volunteers, contributing writers, interviewers and design critics.

Connection's editorial committee is currently seeking architects interested in building their writing portfolio by working with our editorial team to pursue targeted article topics and interviews that will be shared amongst Connection's largely circulated e-magazine format. Responsibilities include contributing one or more articles per publication cycles (3–4 per year).

If you are interested in building your resume and contributing to Connection please contact the editor in chief at: aia.beresford.pratt@gmail.com

President's message:

Climate action and climate justice are key to an equitable world

Since our membership voted overwhelmingly in 2019 to make climate action our top priority, we've marshaled our resources toward this essential fight.

AIA is focused on climate action and climate justice in concert, not in isolation. Together, they are the keys to dismantling systemic racism and marginalization.

As Stacey Abrams stated in her keynote address to AIA's

The families who grow up in the shadow of chemical plants, refineries, landfills — they understand what it means to be in the midst of environmental injustice.

Grassroots Leadership Conference this year, "The families who grow up in the shadow of chemical plants, refineries, landfills — they

understand what it means to be in the midst of environmental injustice. It is in those spaces, in those moments, that you become so valuable. Because your capacity to imagine more, imagine better, imagine different — it extends across this country, and it deepens our capacity for who we can be."

Our focus on climate action and climate justice is essential to building a just and equitable world, and I think the AIA is doing some things now that give us perhaps the strongest chance to achieve real change.

Early in 2020, AIA released a new Climate Action Plan to mitigate planet-warming sources and own the significant impact the building industry's footprint has on climate, to adapt to that impact by transforming our practices, and to catalyze every architect to act.

Additionally, the [Framework for Design Excellence](#) has been recently updated — a veritable playbook for architects to pursue a built environment that is zero-carbon, equitable, resilient, and healthy. The framework defines design strategies across 10 measures inspired by the COTE Top Ten Awards, including equitable communities. It provides best practices, case studies, and high-impact strategies to guide architects at all points of their careers.

Why is that important? I often speak about adaptation being a chief value that architects embody, but adaptation is so much more productive when you're not starting from scratch. Adaptation is possible when you can find efficiencies in what

you're doing so you may reach your goals sooner. Climate action presents the most urgent reason to meet those goals, so let's give ourselves an advantage and heed this framework. For more inspiration, check out the recent Emerging Professionals Exhibit. Unveiled in December 2020, the latest crop of projects shows young architects in action — illustrating how sustainability and resilience can bring social, economic, and ecological value to the built environment. Projects this year include installations, built projects, and games encompassing the theme of environmental excellence.

Another key initiative is the [2030 Commitment](#), our platform for architects, engineers, and owners to work together toward achieving a carbon-neutral built environment by the year 2030. We released our highest ever numbers in 2019. Signatories recorded a 49 percent reduction in predicted energy use intensity. That's the greatest reduction in the program's history. It's equivalent to avoiding 20 million metric tons of carbon dioxide emissions relative to 2030 baseline-equivalent buildings. That figure represents the same level of carbon that is sequestered by 26 million acres of forest in one year.

We have a long way to go, of course. But results like these show that we really can make a difference and that we must push forward to continuously meet our responsibilities as architects, as citizens, and as stewards of our planet.



Peter J. Exley, FAIA

Exley is the 2021 AIA President and co-founder of Architecture Is Fun, a Chicago-based architecture, design, and consulting firm. He is an adjunct professor at the School of the Art Institute of Chicago.

YAF chair's message:

The climate crisis impacts our existing priorities

"Climate action should not be an item on our priority list." Climate scientist Katharine Hayhoe made this seemingly surprising statement at the AIA Grassroots conference in February. Don't take this at face value, though. Her point was that in order to tackle the climate crisis, we need to shift away from thinking of climate change as a distinct issue we can solve in isolation.

Hayhoe cited a 2017 Gallup poll in which 68% of Americans surveyed said they believe in human-caused climate change. However, only 42% thought global warming will pose a serious threat in their lifetimes¹. These numbers illustrate what most have suspected: that the climate crisis is real but often feels abstract and distant. Because many don't know what to do about it, climate action typically falls pretty far down on our priority lists after more tangible things like surviving COVID, feeding our families, performing at our jobs, and paying the bills. The thing most don't realize when we are trying to put dinner on the table is that climate change affects nearly every item on the top of our priority lists.

Admittedly, I am not an architect who has singularly focused on sustainability or resilience. I've always seen those things as important, but they have never risen to the top of the priority list for me individually. Similarly, the Young Architects Forum has historically focused on mentorship and career development for recently licensed architects. For the past three years, the YAF's top priorities have included fostering innovative business models and equitable firm culture to ensure a healthy future for the profession. While climate action has been on our minds, it has never been a top priority. That is finally changing.

On the first day of Grassroots, hundreds of architects participated in virtual congressional visits with our senators and representatives in the AIA's biennial Capitol Hill Day. We were there to lobby Congress to invest \$300 billion over five years in green building infrastructure and to prioritize funding for applicants that abide by the IECC 2021 Zero Code for new construction. On the very same day, the people of Texas were struggling with the aftermath of a winter storm that left millions without power and heat for days in below-freezing temperatures. Subsequent failures in the water system, burst pipes, and failing cell phone service left people without water or communication lines.

The Young Architect Regional Director from Texas, Amaya Labrador, was spared from the worst of the crisis in Houston, but she was struggling to get in touch with all her co-workers to make sure they were safe and to offer help. Later, Amaya jumped onto our YAF Slack channel to ask whether anyone's office has a written disaster communications plan. I sat back and realized that no, my own office does not have a plan in place. How can we possibly dedicate ourselves to practice innovation, career development for emerging professionals, or even putting sustainable design practices into our projects if we worried about staying warm and keeping the lights on? In other words, climate change is not a distant threat that future Americans will need to address. It is an urgent crisis that affects our daily lives right now.

The Young Architects Forum has embraced climate action as one of our top focus areas for 2021. That doesn't mean we're adding dozens of new programs and initiatives. Rather, we are putting Hayhoe's approach into practice by using climate action as a lens through which to approach our other top priorities, including practice innovation and justice, equity, diversity, and inclusion. I invite you to follow along this year as the YAF considers how young architects can employ innovative models of practice and emerging technologies to contribute toward solving the climate crisis and resultant inequities in our communities. I challenge you to contemplate how climate change affects the top items on your own priority list. Because the only way we can solve this crisis together is for each of us to connect climate change to the issues we already care about.

¹ <https://news.gallup.com/poll/206030/global-warming-concern-three-decade-high.aspx>

Read more about Katharine Hayhoe's Grassroots keynote speech here: <https://www.aia.org/articles/6376486-grassroots-2021-katharine-hayhoe-on-starti>

Read more about the AIA's Capitol Hill Day here: <https://www.aia.org/press-releases/6374318-architects-advocate-for-climate-action-res>



Abigail R. Brown, AIA

Brown is an associate at Hickok Cole in Washington, D.C., where she works as a project architect on multifamily and mixed-use projects. She serves as the 2021 YAF Chair.

College of Fellows note:

Meet the 2021 AIA YAF College of Fellows representative

My involvement with AIA began while I was still in high school and my father, also an architect, was president of AIA Louisiana. He imagined a multimedia interactive seminar in 1971 for the architects of Louisiana to help them think “outside of the box” and imagine a different way to communicate and practice. We had films from IBM on the nature of design and creativity, famous renderers giving live demonstrations of “en plein air” sketching, and lectures on the virtues of working together as architects toward a common good as opposed to fighting one another and slashing fees to get projects. It opened my eyes to what presentations could be and how to get a point across to a skeptical audience, lessons I have used ever since.

I ran the projectors, made the slides, did the printing, served the coffee. This was everything a junior in high school does in a firm. It introduced me to collaboration, presentations, communication and catapulted me into service to the profession. Fast forward to 2021, and I head the firm my father started, a 62-year-old company still specializing in health care and senior living projects around the Gulf South.

I have always been involved in some way with AIA and the other architectural collaterals. I served at the local and state level for AIA, founded the AIA’s Design for Aging Knowledge Community, was vice president of the AIA Academy of Architecture for Health, and was a founding Fellow of the American College of Healthcare Architects.

I got involved with the State Licensing Board for architects in Louisiana and started to serve on the ARE writing committee,

ultimately chairing the exam effort. I served as NCARB president, was a NAAB Board Member, and have been on several NAAB accreditation teams.

Our firm has won many health care, senior living, educational, and religious design awards. We worked for wonderful clients, helping them achieve their dreams of a building or a campus and sharing in those dedication days where it all makes sense.

As the College of Fellows Regional Representatives chair for three years, I worked hard to reinvigorate the involvement of reps to engage with the Fellows in their regions and encourage them to help potential Fellows through their candidacies, and to support the mission and stewardship needs of the College. But most importantly, I encouraged interaction with and support of emerging professionals. That role has now been taken over by Jeanne Jackson, FAIA, who is working hard to make the regional reps the best they can be.

My hope as bursar of the College and liaison to the YAF this year is to bridge the needs of the YAF and emerging professionals and help provide support from the COF to the YAF. The energy I have already seen in just a few planning sessions and Zoom calls is infectious, and hopefully we can connect the community of Fellows – 3,000 strong – with the community of YAF.

Please let me know how I can help and how we can all work together to make this a better AIA for all!



Ron Blitch, FAIA, FACHA

Blitch is the president of Blitch Knevel Architects, LLC. He is the 2021 AIA College of Fellows bursar.

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Abi Brown, AIA
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Jessica O'Donnell, AIA
Vice Chair



Ryan McEnroe, AIA
Past Chair

YAF Executive Committee



Monica Blasko, AIA
Advocacy Director
(2021-22)



Beresford Pratt, AIA
Communications Director
(2021-22)



Katelyn Chapin, AIA
Community Director
(2020-21)



Jason Takeuchi, AIA
Knowledge Director
(2021-22)



Matt Toddy, AIA
Strategic Vision
Director (2020-21)



Ronald Blicht, FAIA
College of Fellows Liason
(2021)



Cheryl McAfee, FAIA
Strategic Council Liason
(2021-22)

AIA Young Architects Forum

The Young Architects Forum is the voice of recently licensed architects and a catalyst for progress within the Institute.

2021 Priority Areas



CLIMATE ACTION:

- Connection Q1 theme is “Climate Action: Environment, Sustainability, and Practice.”
- Showcase the work of diverse young architects whose work has a focus on environmental justice and its role in climate action.
- Spotlight young Citizen Architects in a virtual panel discussion highlighting the importance of architects involved in local government and community engagement addressing the climate crisis and historic inequities.



J.E.D.I.: JUSTICE, EQUITY, DIVERSITY & INCLUSION:

- Connection Q3 theme is “J.E.D.I. – Justice, Equity, Diversity & Inclusion”
- Create space for growth and learning opportunities, inspire initiatives, and partner with those who have been deep in this equity work.
- Amplify the diverse perspectives of young architects and engage them in national conversations.
- Share resources for young architects to advocate for more equitable office environments, profession, and communities.



PRACTICE INNOVATION:

- Connection Q4 theme is “Practice Innovation”
- Perpetuate innovation in the practice of architecture by empowering young architects to do things they wouldn’t otherwise have the capital or resources to accomplish.
- Foster explorative opportunities to test new ideas that disrupt the traditional concept of architectural practice, process, and product.
- Collaborate with College of Fellows and Large Firm Roundtable to incentivize the creation and proliferation of innovative practice models.

ADVOCACY & OUTREACH:

- Feature stories on civic engagement and community leadership in the Q2 issue of Connection.
- Host a 3-part Advocacy webinar series to include the following topics: Citizen Architects, Designing for Equity, and Practice Innovation through Accessibility & Inclusive Design Panel
- Partner with the Small Firm Exchange on webinars focused on business topics for young architects.
- Bring the Practice Innovation Lab to the next generation of architects by continuing our partnership with AIAS on the virtual Chaos Session series.

MENTORSHIP & FELLOWSHIP:

- Share stories on mentorship and Young Architect Award Winners in the Q2 issue of Connection.
- Empower young architects to advance their careers by making notable contributions to the profession and their communities.
- Develop a leadership transition plan and an implementation strategy for the next phase of the YAF + COF ALIGN Mentorship Program.
- Host a series of Fireside Chats with Fellows to increase the accessibility of pathways to Fellowship for young architects.
- Build community within the YAF through virtual happy hours and a YARD buddy system.

HOW TO FIND US:

- **Issuu:** issuu.com/youngarchitectsforum
- **KnowledgeNet:** tinyurl.com/yafknowledgegenet
- **Instagram/Twitter:** @AIAYAF
- **Facebook:** AIAYAFNational
- **Connection:** YAF’s quarterly digital publication is produced by emerging professionals with practical takeaways for all members of our profession.
- **Toolkits:** A resource for young architects and AIA components, past toolkit topics include How to Facilitate the Emerging Professional Friendly Firm Program, How to Start or Grow an Emerging Professional Committee, and How to Facilitate a Practice Innovation Lab.

Young Architects Forum regional leadership leadership

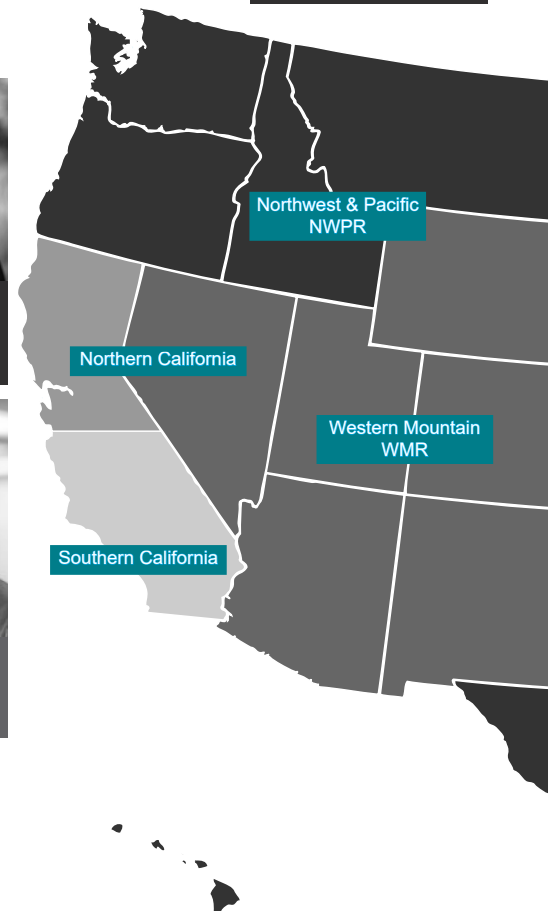
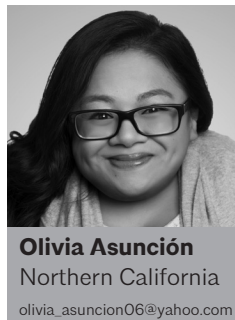
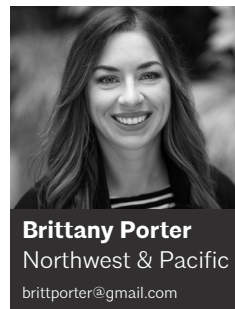
Meet the 2021 Young Architect Regional Directors

Young Architect Regional Directors (YARD)

The Young Architect Forum (YAF) is an outgrowth of a 1989 AIA Grassroots program involving 36 young architects from around the nation. The issues raised and potential benefits visualized at that meeting led to the 1991 formation of a national YAF Committee.

The YAF Committee, modeled on the structure of the College of Fellows (COF), has regional directors (YARDs) from each AIA region who serve as the primary conduit between their respective local AIA chapters and the national YAF Advisory Committee (AdCom).

Through the different focus group efforts, YAF seeks to engage recently licensed architects in leadership to become agents of change, advocate for issues of particular importance to recently licensed architects, inspire professional growth amongst the recently licensed and promote mentorship at all career stages and provide a community network of peers throughout the nation.





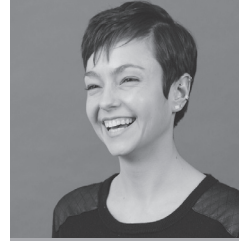
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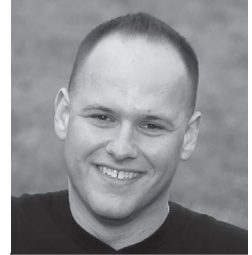
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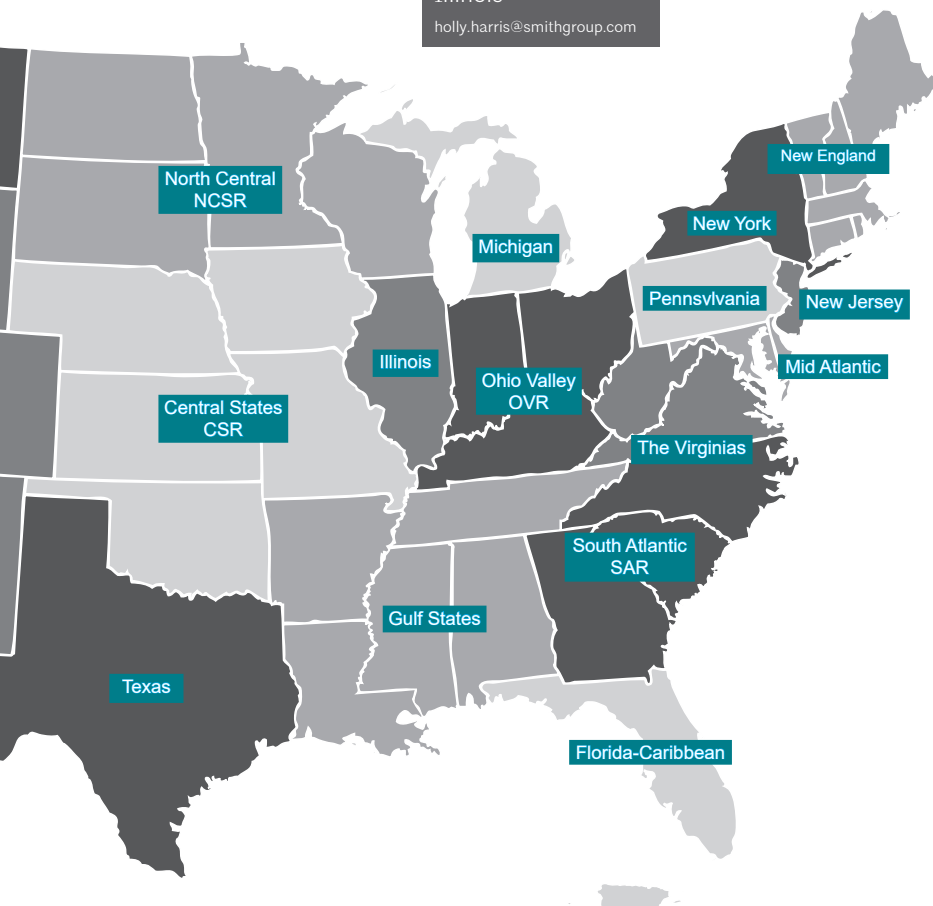
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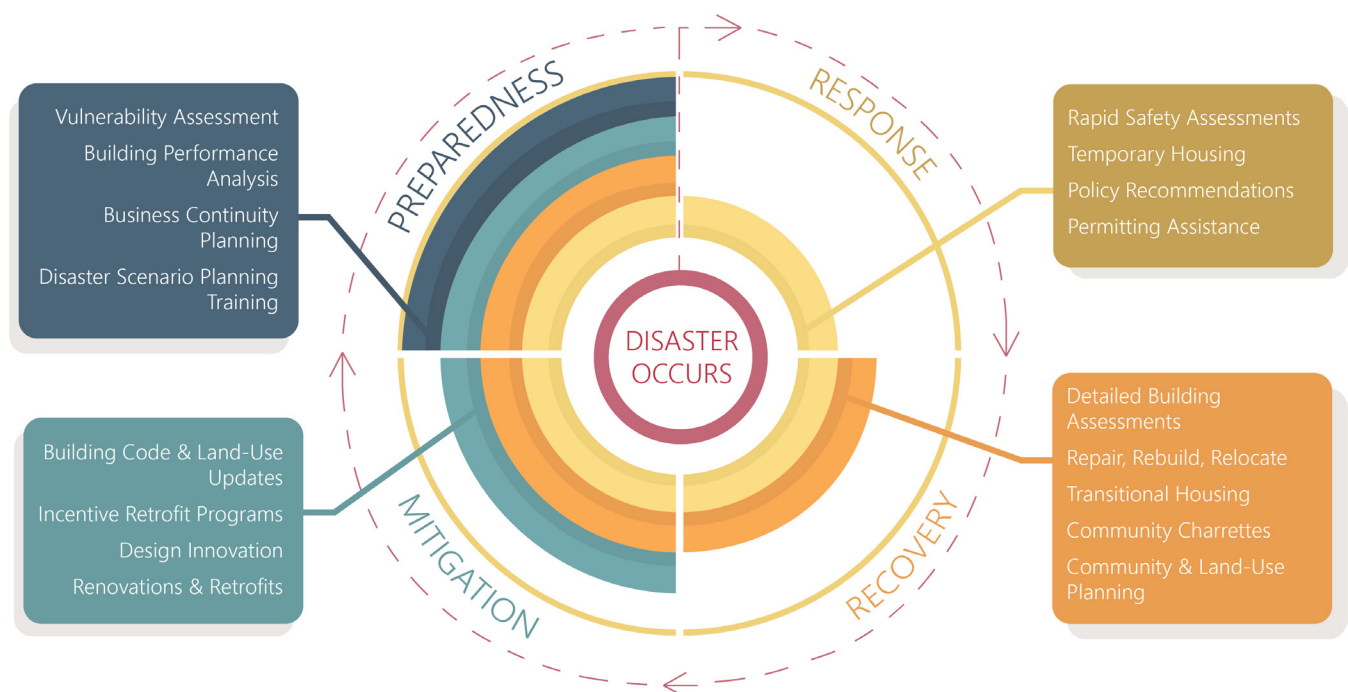


Soft skills for building local resilience initiatives

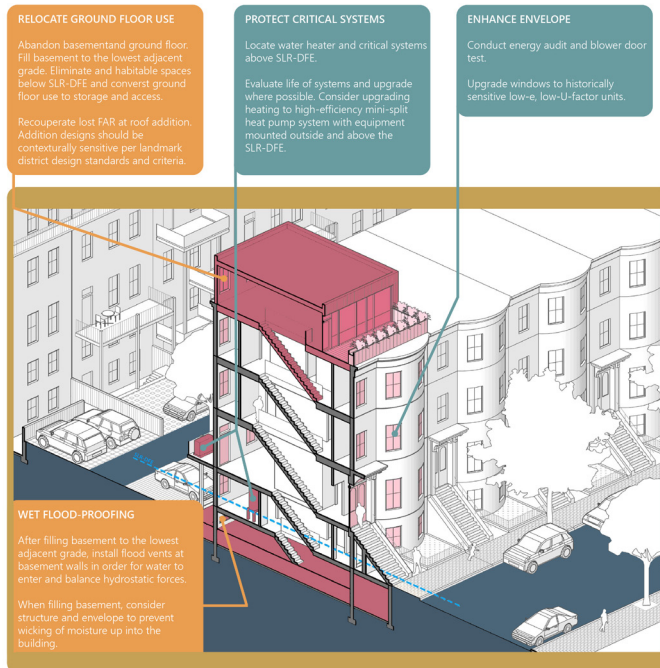
In mid-February, many across the nation watched as Texas experienced an apocalyptic series of cascading events that hindered utility and food supply chains from delivering necessities to homes and communities across much of the Lone Star State. From news stories reporting record-breaking cold temperatures on Monday, rolling power outages on Tuesday, bursting pipes and lack of water service on Wednesday, bare grocery shelves on Thursday, and many cold, hungry, and huddled in their cars by Friday asking, “When will this all end?” the rest of us watched and wondered, “Can this happen in my own community?”

As atypical as the events in Texas were, the state is not unfamiliar with the term “disaster assistance.” With increasing hurricanes and high-heat events each year, Texas is now standing at the precipice of needing to enhance its overall

resilience or face billions of dollars in natural hazard damages and the potential loss of its population looking for safer ground. With geography being the primary determinant of a community’s risk to natural hazards, we’re now seeing increasing considerations for vulnerable populations, critical facilities, cultural assets, infrastructure, and other important land uses that lie in harm’s way as we approach incoming projects in our firms. Design professionals cannot always solely rely upon the building code to resolve the inequities highlighted by climate change and are finding themselves more often flexing their communication, problem-solving, and leadership abilities to bring a unique perspective to the conversation. As architects and designers, we possess unique skill sets that can bring value beyond our desktops and into the places where we live and work to ensure they are safer, healthier, and more resilient communities.



Above: The Emergency Management Cycle Diagram



Above: Illustrative Diagram of an Attached Townhouse Typology from Boston's Coastal Flood Resilience Design Guidelines.

The Four Phases of Mitigating and Managing Risks Caused by Disasters

Events that pose hazards to our communities are cyclical in nature. They have a “before” phase, consisting of preparedness measures one can put in place, and they have an “after” phase, where the emphasis is placed on response and recovery of the buildings and places that were unable to withstand the natural hazard.

Architects and designers can play a critical role in each of these phases. Throughout my career, I have pursued a specialty in resilient design and have gained valuable experiences volunteering and participating in preparatory and response programs. Through the following examples, I would like to highlight the ways one can contribute and get involved.

Preparedness

With a focus on understanding the vulnerabilities a site or place may face, many states are now implementing disaster scenario planning opportunities for architects and designers to directly collaborate with town and city administrations to assess their potential risks. In Massachusetts, the Office of Energy and Environmental Affairs has created a grant program for municipalities to assess their vulnerability to and prepare for climate change impacts. Called the Municipal Vulnerability Program, or MVP, the state offers a free training course to architects and designers to provide technical assistance to communities that are undergoing a vulnerability assessment, as well as with compiling the data gathered into a report utilizing the Community Resilience Building Framework. Volunteers are taught how to create or update a local hazard mitigation plan and are offered guidance on how to incorporate nature-

based solutions into the planning process. At the completion of the one-day training event, the volunteer gets registered into the state's official database of “Certified MVP Vendors” and can then begin collaborating with communities. Since the program's inception in 2017, many Massachusetts architecture firms have had employees certified through the MVP program and have begun offering resilience planning services to their communities. The benefits to both the firm and the community are invaluable, and though the assisting firm will receive a modest stipend for its services, the community will receive a state grant to fully realize a priority project outlined in its recently completed vulnerability assessment.

As an MVP Certified Vendor, I recently had the opportunity to collaborate with the city of Boston in creating its Resilient Building Design Guidelines, a document envisioned as a resource to assist property owners with implementing measures to better protect buildings throughout the city's neighborhoods from coastal flood damage. By collaborating to align zoning regulations with scalable climate actions, this resource will help to facilitate the implementation of flood protection and preparedness strategies that threaten many of Boston's historic structures and communities.

Mitigation

Another avenue for architects and designers to flex their architectural skills while contributing to a community resilience conversation is to connect with like-minded industry organizations. In the New England region, the Urban Land Institute hosts a Climate Resilience Committee for land-use professionals interested in using design innovation to redefine how we renovate and retrofit buildings for climate change. The committee seeks to establish regional collaboration among policymakers, encourage new methods and technologies for resilient design, and create incentives for implementing resilience measures.

As a member and active participant of such an organization, I was able to join a collaborative team that focused on a heat island study in some of the most vulnerable communities throughout the metro Boston region. With four communities earmarked for significant redevelopment, we conducted interviews with representatives from local government, nonprofits, community development corporations and public advocacy groups to gain insight into each community's resilience challenges. Following the stakeholder interviews, participant architects and designers identified the areas for redevelopment and prepared assessments and recommendations for incorporating resilience measures to mitigate the effects of extreme heat that were affecting the community. This unique forum for investigation allowed local architects and designers to develop a vision for how each community can make changes to live with climate change and extreme heat. It opened the opportunity for the architectural community to alter the thinking of policymakers, developers, and property owners so careful planning and choices can be made to maintain the continuity and quality of each community's urban experience.

Response and Recovery

If you find yourself in a community that has been harmed by a natural disaster or hazard, you can still contribute to the recovery effort through performing safety assessments of damaged structures or host community-centered charrettes to guide the rebuilding process. Often, state or local governments do not have the resources to respond in a timely manner following a major disaster, and they will welcome additional assistance and resources to meet the needs of the community. As architects and designers, we share the same skills as our local building officials for assessing buildings and can partner to determine the habitability of homes and businesses to prevent any harm to inhabitants.

After Superstorm Sandy brought devastation to the Northeast, I set out to establish a disaster assistance program that could allow architects to help communities prepare for, respond to, and recover from disaster events. Called the Massachusetts Architects & Engineers Emergency Response Task Force, or MA AEER, I founded the organization to allow volunteer architects and engineers to become “second responders” and to be rapidly mobilized to assist communities in their greatest times of need after a disaster. The MA AEER Task Force has been tirelessly working toward establishing proper good Samaritan legislation in Massachusetts so its members can volunteer with extended protection from liability, as well as refining a contractual agreement for services with the Massachusetts Emergency Management Agency (MEMA).

Established in 2017, the organization has trained and certified over 300 volunteer architects and engineers as rapid assessment evaluators through the Safety Assessment Program (SAP) offered by the California Office of Emergency Services (Cal OES), a recognized leader in disaster response.

The Safety Assessment Program is a full-day technical training that teaches participants to conduct rapid damage assessments of structures according to the Applied Technology Council’s guidelines for building safety evaluations post-earthquakes, wind storms, and floods. Each volunteer who completes the SAP training will receive an official ID



Above: Photo of a Stakeholder Workshop. **Below:** Concept Rendering of Alternating Green/Pedestrian and Vehicular Corridors to connect the East Boston Community to its Waterfront from the ULI Living with Heat Report.

POST-DISASTER SAFETY EVALUATION OF BUILDINGS

ATC-20, ATC-45 and Cal OES SAP Training



Large devastating events are a potent reminder about the importance of disaster preparedness within our communities.

After such events, which typically involve buildings and critical infrastructure, assessing the damage and safety is one of the most important first steps to the recovery process. Displaced citizens place an even greater demand on disaster response and recovery resources. Post-Earthquake, Windstorm and Flood Safety Evaluation of Buildings (ATC-20 & ATC-45) are the standards for post-disaster safety evaluations of buildings in the United States and around the Pacific Rim. Training to hone these skills is necessary for our nation's disaster preparedness to quickly assess building safety and to communicate that assessment effectively to the public.

The person identified on the front of this card is a Disaster Service Worker Assigned ESSENTIAL EMERGENCY DUTIES during times of disaster or emergency. It is important that he/she be granted reasonable access to place of assignment in order to carry out his/her prescribed duties.

This card should be worn or displayed at all times of disaster or emergency.

This card is property of the

CA Office of Emergency Services
3650 Schriever Avenue
Mather, CA 95655

If found place in the nearest mailbox
Postage Guaranteed

Above: A Call to Action for Cal OES SAP Training with Images of a Certified SAP Evaluator's Identification Card.

card from Cal OES and will be recognized as a nationally credentialed second responder. For further information on whether your state has an established disaster assistance program, you can inquire with your state or local AIA chapter or join the AIA National Resilience Network for news and opportunities to participate in deployments hosted throughout the nation.

Regardless of whether you believe you are well versed in resilient design and disaster response or just beginning the conversation, there are numerous opportunities available to enhance your skills in building local resilience. Through becoming an active collaborator within your community, you'll help promote strong stewardship to ensure resilience to climate change lessens its impact on our built and natural environments.



Gail Kubik, Associate AIA

Kubik is the Director of Resilient Design and Research at Fused Studios in Salem, MA. She is also the Massachusetts AIA State Disaster Coordinator and serves as the Associate Representative in the AIA Strategic Council. Kubik is a recipient of the 2018 AIA Associate's Award.

Premium Elevation, LLC

The threat of climate gentrification is galvanizing Miami's most vulnerable neighborhoods

In most other urban areas in the country, communities of color were often relegated to flood-prone areas with poor infrastructure through the exclusionary housing policies of the twentieth century. And as we have witnessed, minority communities like Houston's Fifth Ward and New Orleans's Ninth Ward bear the brunt of the impacts from the twenty-first century's strongest storms.

But in South Florida, the opposite segregation pattern is true. Miami's Black and minority communities were historically confined to the northwest quadrant of the city, atop a limestone ridge that sits seven to 14 feet above sea level. These neighborhoods were established near the Flagler railroad by many of the line's African American and Bahamian builders, while Miami's white and affluent populations resided in more desirable coastal areas like Miami Beach, which peaks at four feet above sea level. Now with more developers and landowners considering the long-term impacts of sea level rise, flooding, and hurricanes to their properties, Miami's historic neighborhoods of Little Haiti and Liberty City are feeling a new stress created by the convergence of the climate and affordable housing crises — the threat of climate gentrification. One of Miami's oldest neighborhoods, Lemon City, was settled by Black and white homesteaders following the Civil War, growing into a thriving community. Over time, Haitian immigrants moved into and rebuilt the neighborhood, bringing the culture, traditions, and sense of place to the neighborhood now known as Little Haiti. Largely a community of low-income renters, it is one of Miami's last areas with an adequate stock of naturally occurring affordable housing, or rental units not requiring government subsidies. But with rising property values, the neighborhood is threatened with gentrification as investors target the area.

[Little Haiti's average home price](#) in 2012 was \$102,000. Compared with the average home price in 2021 of \$340,000, the neighborhood has seen values jump 233 percent in just nine years. Across the same nine years, [Miami Beach](#) has seen only a 44.6 percent increase in home values, from \$258,000 in 2012 to \$373,000. Similar discrepancies between the rates

of appreciation of land values in high-elevation communities and those in low-elevation and flood-prone communities were initially published by Harvard researcher Jesse Keenan, drawing some outside attention to the issue. But the people of Liberty City and Little Haiti did not need an Ivy League researcher to concern their already vulnerable communities. Perhaps this sentiment is best embodied by a quote from climate activist and Liberty City resident Valencia Gunder from a [WLRN podcast series](#) on the topic:

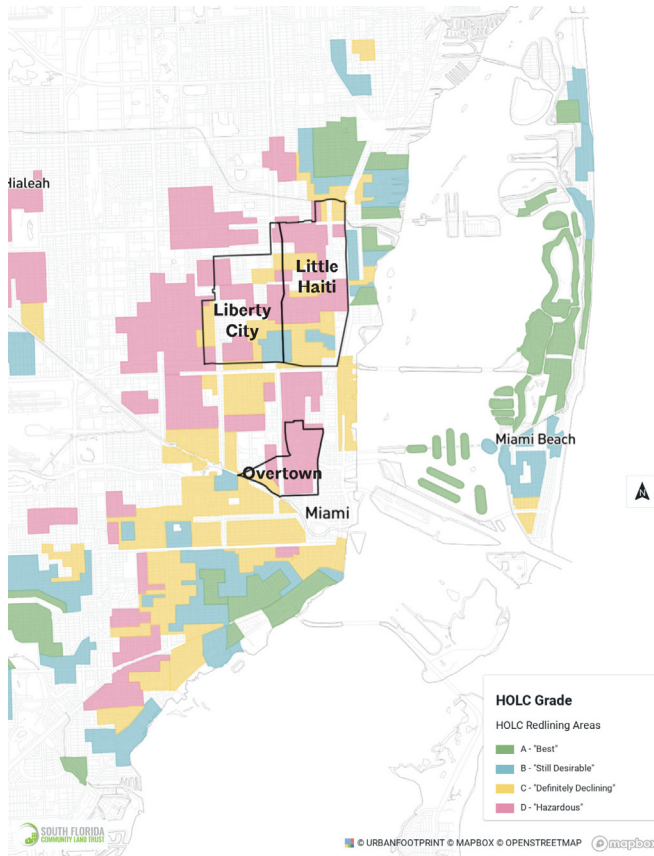
"My grandfather, he always would talk to us, like, 'They gonna steal our communities because it don't flood.' I remember him saying it as a young child."

Other than this accelerating growth in land value of high-elevation properties, there is no tangible evidence that current development pressures in these communities are a direct result of climate gentrification. However, investors' intentions for future waves of development have been made clear. For example, the Urban Land Institute recommended in a study for the City of Miami that developments focus on "density and transit oriented development along more naturally water resilient elevations like the ridge," while noting that city officials would have to "be sensitive to potential displacement pressure." Apparently, one investor has taken this recommendation to heart as two properties in Little Haiti are owned by Premium Elevation, LLC, per the [Miami-Dade County Property Appraiser's database](#).

In the residents' eyes, the biggest threat to the neighborhood's

"My grandfather, he always would talk to us, like, 'They gonna steal our communities because it don't flood.' I remember him saying it as a young child."

character is the 17-acre Magic City Innovation District, planned at the eastern edge of Little Haiti. In plans submitted to the city by developers of the district, it was directly stated that



Above: Miami's Black and minority communities were historically confined to the northwest quadrant of the city atop a limestone ridge, while more affluent whites resided along coastal areas like Miami Beach.

a reason for selecting the site was the relatively high elevation on the ridge. The mixed-use district plans to bring a walkable neighborhood of commercial, residential, office, and hotel uses to revitalize Little Haiti into a "world-class destination." The project touts its potential economic impact to the area through job creation, impact fees, future tax revenue, and a contribution of up to \$31 million to the Little Haiti Revitalization Trust. It also emphasizes that "preserving and celebrating the thriving Caribbean culture of Little Haiti and the surrounding neighborhoods has been a foremost priority."

Magic City also qualifies under Miami's new zoning code, Miami 21, as a special area plan (SAP). By assembling over nine contiguous acres, the developers are entitled to high densities that otherwise wouldn't be allowed by the neighborhood's zoning in exchange for certain community benefits. But activists Francois Alexandre (Konscious Kontraktors) and



Above: As seen in a map of FEMA Flood Zones, many of Miami's minority neighborhoods including Overtown, Little Haiti, and Liberty City are at a low-risk of flooding and are now being targeted by investors seeking higher ground.

Denise Gharney (Community Justice Project) argue that despite the developer's proposed vision and community benefits, they have never understood the community's own vision for its neighborhood.

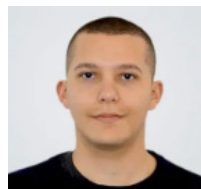
In a climate gentrification session at Community Reinvestment Alliance of South Florida's Summit 21, Gharney stated, "It all goes back to Miami 21. SAPs are tools used by mega-developers to accelerate gentrification." The code does not call for enough community participation in the process and does not set a base expectation of benefits to be provided to communities. Each project is expected to negotiate a community benefits agreement (CBA) from zero. "Government should already have the strong stipulation that developments need community vision from the start," Alexandre said. Although a community's unique needs should be the driving factor, various CBAs from around the country have included

affordable housing quotas, baselines for job creation and employment of local workers, funds for targeted local job training and affordable housing initiatives, and local environmental cleanup among other benefits.

The majority of Little Haiti's traditional owner-occupants are elderly, retired, and living on fixed incomes. For many of these low-wealth landowners, would it not be more beneficial to embrace neighborhood change and take a check offered by investors? Gretchen Beesing, CEO of Catalyst Miami, argues that the question then becomes, "Where would these residents go?" She contends that the most viable economic option for displaced families would be south Miami-Dade County, a region more vulnerable to flooding and the impacts of extreme weather events, often the first part of the county to evacuate in an emergency. Like Alexandre and Gharthey, Beesing advocates for strong community-benefits agreements as well as innovative real estate solutions to combat the threat of climate gentrification. "Community ownership is essential," Beesing noted in a [recent talk](#), also citing the Urban Land Conservancy's work to build and preserve affordable, community-owned housing and office space in Denver.

Developers and owners are beginning to see the market value and business case for building high-performing projects in resilient locations. As architects and designers, we should be excited to take on a new generation of projects that reduce operational and embodied carbon and are more resilient to extreme climate events. Whether working on a single green project or planning an entire green district of resilient infrastructure and building projects, there is also a responsibility to be conscious of the adverse impacts on vulnerable populations, including them in the decision-making process from Day One.

The environmental justice movement of the 1970s grew from the need to advocate for low-income and minority citizens who were disproportionately harmed by environmental hazards embedded in their communities. If resilient properties and districts are planned to benefit only high-income residents while low-income minority communities are displaced to more vulnerable areas, it would be clear that decision-makers have since learned nothing. Rather than repeating past mistakes by not planning inclusively, developers and design professionals can lead by example to build resilient, equitable, and vibrant communities for future generations.



John J. Clark, AIA, NCARB

Clark is an Enterprise Rose Fellow and project manager with the South Florida CLT in Fort Lauderdale, Fla. He is the past Communications Director for AIA Young Architects Forum.

A better built environment for the changing environment

Designing for resiliency amid the inevitable impacts of climate change



Above: Wellmark Corporate Headquarters — Photographer, Steve Hall

The infrastructure of our towns and cities — buildings, homes, roadways, land use — makes up what we know as the built environment. These human-made environments are where we often live and work, and they strongly influence how we behave and feel and can even affect our physical and mental well-being. Designing, planning, and engineering these spaces is becoming increasingly complex as we work to mitigate the effects of climate change. The good news is, as designers, planners, and engineers, we also have the unique opportunity to actively work toward modifying the built environment to withstand, and even offset, the impacts of climate change. To do that, it's helpful to first start with an exploration of how we got to where we are today.

The Basics: Weather vs. Climate

Before looking at how our built environments must change, it's helpful to get a basic understanding of what we mean when we say climate change. People sometimes confuse the terms weather and climate, and while they may seem similar on the surface, they describe two very different aspects of the atmospheric environment.

Weather refers to the day-to-day variability of our atmosphere. And as anyone who's traveled from one state to another will tell you, the weather can vary greatly from place to place. It can change over minutes, hours, days, and weeks.

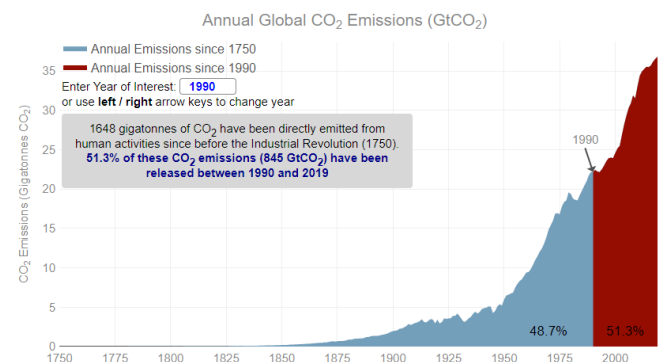


Climate, on the other hand, describes long-term conditions in specific areas. Different regions have different climates, and when we talk about climate, we're referring to averages of precipitation, temperature, humidity, sunshine, and wind (among other things) that occur over a long period. Typical climatological practice analyzes 30 years of data to establish climate normals and look for patterns.

Looking Back on Our Changing Climate

Since the dawn of humankind, we have been influencing the world around us. From hunting and gathering to agricultural development to building roads, our species has always looked for ways to modify the environment around us to suit our needs and allow us to prosper. It wasn't until the onset of the Industrial Revolution, however, when person and machine united, that humans really started to have a significant impact.

The Industrial Revolution sparked a massive uptick in carbon dioxide in the atmosphere as the need for energy to power machines steadily grew. Technological investments and human growth continued to increase energy needs, while wood, coal, and then oil emerged as cheap energy options. Fifty percent of our CO₂ emissions since 1750 have occurred in the past 28 years; CO₂ concentration is over 400 parts per million — a number



Above: Cumulative CO₂ emissions calculator. Image courtesy of Engaging Data; data courtesy of the Global Carbon Project.

We can measure these changes by looking through multiple lenses. Ice core samples offer the longest record at 2 million years, but we also have centuries-long temperature records from Europe that demonstrate temperature changes over time. By looking at this data, we're able to see the effects of a hotter climate: coral bleaching, heat waves, droughts, forest fires, and significant flooding and sea level rise.

Modifying Our Built Environment

Even if we stop producing greenhouse gases today, the effects of climate change will continue to affect our world — including our built environments. As rainfall and humidity levels rise in certain areas, for example, designers will need to consider which building materials can respond effectively to increased moisture levels to prevent premature failure or loss of serviceability. Zoning and energy codes are reactive rather than proactive and will continue to lag behind the progression of climate change. Sea level rise will affect our critical coastal infrastructure, including homes, ports, and naval bases.

When it comes to designing the built environment, it's helpful to look at the [Natural Hazard Mitigation Saves: 2018 Interim Report](#), a study released by the National Institute of Building Sciences that highlights how mitigation strategies can affect safety and prevent property loss and disruption of day-to-day life. In terms of results, the report found:

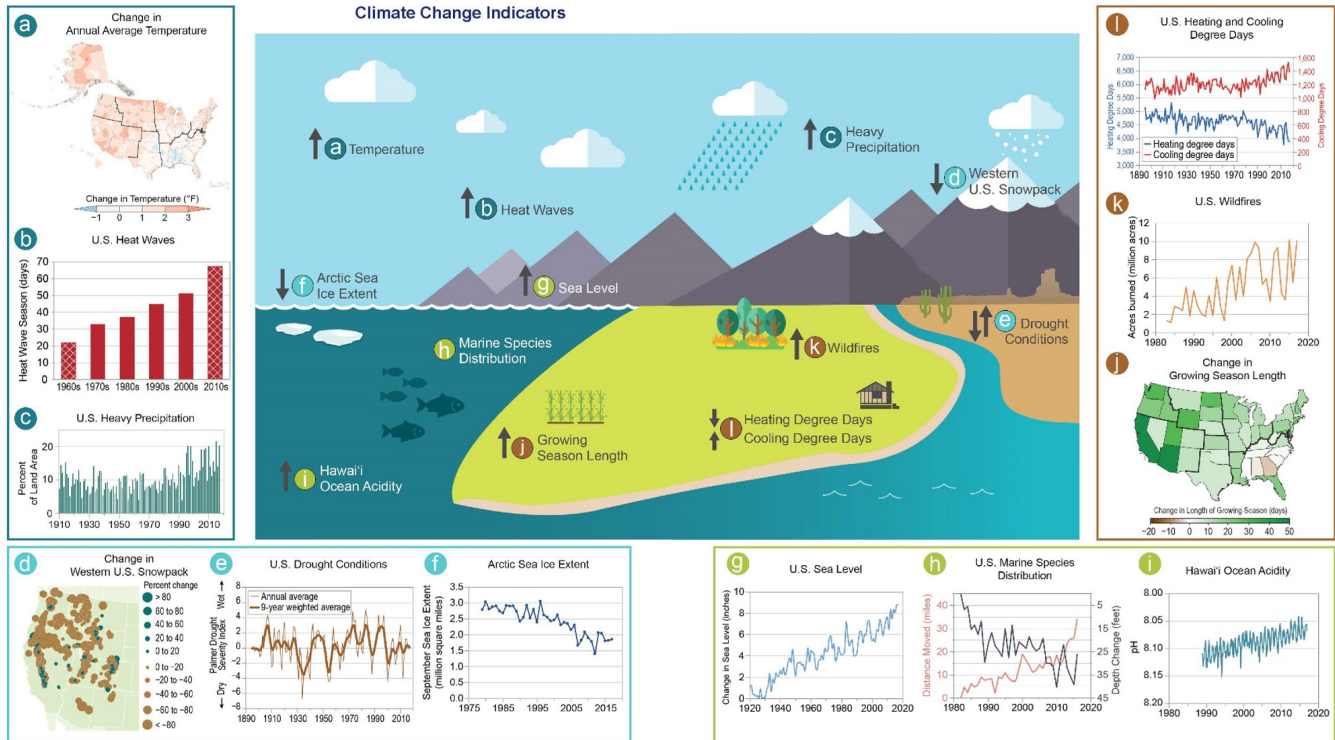
- For flood resistance, incorporating at least one foot of freeboard into the elevation requirements to comply with the 2018 I-Codes saved \$6 for every \$1 invested.
- For resistance to hurricane winds, complying with roofing and a variety of openings and connection detailing requirements in the 2018 I-Codes saved \$10 for every \$1 invested.
- For resistance to earthquakes, building new buildings stronger and stiffer to comply with the 2018 I-Codes saved \$12 for every \$1 invested.

The report determined that these benefits carry over to all building stakeholders, from developers to title holders and lenders to tenants and communities. Here, we see the real return on investment for making these design changes.

Creating Meaningful Change

RDG's approach to climate change mitigation is rooted in our commitment to creating meaning together. Regardless of the viewpoints or politics of ourselves or our clients, we look to create spaces that are well planned and designed and sustainable, something that's evident in our involvement in the [AIA 2030 Challenge](#). In practice, our climate-positive approach incorporates several key strategies:

- **Managing risk.** By doing nothing, we increase the risk for all parties. It's important to have conversations with clients as early on in a project as possible about the climate risks



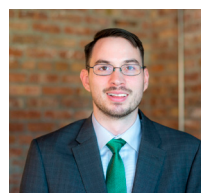
Above: Climate change indicators from the National Climate Assessment. Image courtesy of the U.S. Global Change Research Program.

of a site and weigh the risks against the cost outcomes of responsive materials.

- **Leveraging technology.** Resources like *cove.tool* provide energy use intensity baselines, so designers can better understand a building's energy footprint. Geographic information systems allow planners to map things like topography, soils, and flood zones to better understand a community's overall landscape. Using a variety of advanced software options like these enables designers and planners to measure and test as they are making critical design decisions.
- **Designing and planning for the future.** Each discipline offers its own expertise in creating built environments responsive to climate change. Landscape architects

contribute understanding of the impact of site and how sustainable a new design will be within the context of that site; urban planners look for adaptive-reuse opportunities and consider the future of where climate migrants will go if places become uninhabitable; architects consider materiality and embodied carbon and look to life-cycle cost analyses when designing spaces; and MEPs consider low-flow fixtures, produce daylighting and fixture placement analyses, and make use of "smart" mechanical systems.

Small steps can have a big impact. We all have a part in this, and if we commit to making a difference – to thinking differently about the way we interact with and modify our environment – the spaces and places we create can be resilient enough to withstand, or even offset, the inevitable impacts of climate change.



Greg Jameson

Jameson served as RDG Planning & Design's GIS specialist from 2014 - 2021, delivering proven solutions for every project and helping enhance RDG's sustainable design and planning practices.

At a climate crisis crossroads— Envisioning an equitable future

One Rust Belt town’s EcoDistrict roadmap to resilient, healthy, and inclusive community building



Robert Tuñón, AIA, NOMA, EcoDistricts AP

Tuñón is an associate at Rothschild Doyno Collaborative and the board chair of the Etna Community Organization. As a professional, he specializes in the adaptive reuse of existing buildings and its intersection with community development and affordable housing. In his service role, Tuñón volunteered as a community organizer throughout the Etna EcoDistrict planning process and continues to serve today in its implementation



Anna Rosenblum, Assoc. AIA, LEED AP EB O&M, EcoDistricts AP

Rosenblum is an associate at evolveEA. She specializes in sustainability consulting, community planning, and stakeholder engagement design, with a focus on high-performing communities such as EcoDistricts. Rosenblum served as project manager for several projects that have won national planning and design awards, and she guided certification efforts for the first three certified EcoDistricts in the world. Rosenblum holds a Master of Science in Sustainable Design and a Bachelor of Architecture from Carnegie Mellon University.

MB: Etna’s history as a quintessential Pittsburgh-area mill town and flood-prone geographic positioning have established it as a particularly vulnerable community economically and environmentally. In the wake of increased calls for social justice and threats of climate change, what challenges does Etna face in the years to come?

RT: Etna is a place with a fluctuating history: There have been times of great prosperity and times of devastating crises, but we are most certainly on the upward swing again. When talking with residents, both young and old, there is a sense that we look at our challenges with optimism. Part of that spirit is because Etna has faced and still faces the threats of climate change “shocks” and socioeconomic “stresses.” We are resilient.

These challenges have helped us focus on what is most important: our people and how we build a more inclusive and equitable world; our infrastructure and how we redevelop the built environment so that it benefits our health and well-being; our culture and how we strengthen relationships with one another to achieve a supportive, connected community. The other part of the optimism stems from seeing the transformative stormwater management projects from our municipal government. Etna Borough has completed multiple phases of streetscapes which remove millions of gallons of stormwater from our system, and doing it in a way that is both functional and beautiful. While we are making progress, the primary challenge we still face is continuing to fund the bold vision outlined in the [Etna EcoDistrict Plan](#).



Above: Image Credit – evolveEA. The design proposal for this district seeks to enhance existing activity in Etna’s business district and supplement it with a new community center and library, health and social services hub, and grab-and-go healthy food store. This district also enhances connections to community green spaces and features stormwater management streetscape improvements implemented by the Borough of Etna.

MB: What past initiatives and future goals led Etna to the EcoDistricts framework and a partnership with sustainable architecture and consulting firm evolveEA?

RT: Etna has two similarly sized neighboring communities experiencing many of the same demographic changes and environmental challenges: Millvale and Sharpsburg. Over the past decade, the three communities have partnered on an increasing number of projects, programs, and initiatives that have consistently proven the proverb, “If you want to go far, go together.” After Millvale became nationally recognized for its EcoDistrict planning work with evolveEA, and Sharpsburg followed, it was a natural progression for Etna to engage evolveEA, as well.

Also at that time, Etna’s municipal leaders were seeking to find and inspire a new generation of leaders to step forward. Etna, much like the entire Pittsburgh and Rust Belt region, has a generational gap from population loss following industry collapse. The borough manager, Mary Ellen Ramage, and mayor, Tom Rengers, welcomed new voices and served as mentors. Perhaps the greatest achievement and contribution of the Etna EcoDistrict work was the shaping of a multigenerational team that could collaboratively carry forward future efforts.

MB: Describe the community engagement process evolveEA conducted with the ECO in Etna – how did it differ from a typical approach, how did the team create an inclusive environment and achieve consensus, and what were the biggest challenges?

AR: The Etna EcoDistrict community engagement process began before evolveEA was even involved – with residents and leaders building community capacity through monthly meetings on their own.



Above: Image Credit – evolveEA. The southwestern end of Etna’s business district features a gas station that is recommended to be transformed into a solar-powered healthy food grab-and-go shop, with a stormwater park and electric vehicle charging stations.

During the first year of evolveEA’s involvement, we dedicated each month to an EcoDistrict quality-of-life area (water, mobility, air quality, energy, food, and social equity) through a community meeting with residents, business owners, and the planning team. EvolveEA presented technical analysis, and attendees shared their lived experiences related to the topic. “Champion Meetings” that followed offered an opportunity for residents to dive deeper into selected topics. These meetings helped the community create a shared definition of the quality-of-life topics and distill shared values.

Residents came into the second year with a clear vision for the future of their community and an understanding of the technical aspects of the recommendations. We asked residents what types of places and projects they would like to see in Etna, and we returned a series of recommendations. Through this process, the community was not simply consulted, but were empowered to become technical experts and advocates. As with engagement in any community, reaching as many diverse voices as possible was a challenge. ECO hosted 36 free, all-ages, open-to-the-public events that reached over 400 unique participants, almost 12 percent of the community. ECO led initiatives such as an art tour, a spaghetti dinner, a kids’ water education walking tour, and engagement with teens at the local high school.

Reaching consensus was another challenge. While residents may have differing opinions about the specifics, at the end of the day, everyone agreed that reducing flooding, improving air quality, making energy more affordable, creating jobs, and increasing food security would improve the quality of life for everyone in Etna.

MB: From the education series and community planning sessions, what goals and priority projects were agreed upon to work towards a more resilient and equitable future?



Above: Photo Credit – Robert Tuñón. A small self-selected group of Etna community members who are passionate about water gathered for a Water Champions meeting in June 2018 to discuss what water means to Etna.

AR: Through the two-year process, the community developed six vision statements that guide the Etna EcoDistrict Plan, one for each of the EcoDistrict quality-of-life areas. Each quality-of-life area contains four goals that range from increasing the use of alternative transportation to supporting and celebrating Etna’s vibrant culture and identity. The plan is ambitious, and ECO’s ability to implement it will depend on funding and capacity, so the community-informed prioritization of projects is key.

RT: We have made substantial progress into the first two catalytic projects, as well as smaller initiatives and programs. For short-term wins, we just launched our second Urban Walking Trail and are in the process of launching the second year of a free container gardening program. For the long-arc catalytic projects, we are working alongside Etna Borough to redevelop a highly visible vacant lot into the Etna EcoPark, a public green space with stormwater management features. We broke ground in October 2020, and a team of community volunteers are working to open the park in early summer. Concurrently, we are in pre-development for the Etna Center for Community, a combination library, cafe, and community gathering space. During the planning process, the community’s greatest desire was for a library within Etna’s borders. As we are committed to realizing the vision and dream of the Etna EcoDistrict, we have acquired a historic building in the heart of Etna’s business district, and fundraising is underway.

MB: What measures were established to hold the community and its stakeholders accountable to the goals outlined in the EcoDistrict plan?

AR: We collaborated with the community to establish indicators for each quality-of-life area that helps them answer

WATER
VISION

Etna is a resilient community that protects its people and waterways through creative water interventions.

MOBILITY
VISION

Etna is a connected community where people of all ages have safe, reliable, and affordable mobility options.

AIR
VISION

Etna is a healthy community with empowered advocates that take a balanced approach to air quality.

ENERGY
VISION

Etna is an innovative community that takes collective action to provide smart energy solutions.

FOOD
VISION

Etna is a food-secure community with opportunities to grow, buy, share, and eat food locally.

EQUITY
VISION

Etna is an inclusive community that embraces diversity and activates everyone to shape our future together.

Above: Image Credit – Etna EcoDistrict Plan. During the first year of the Etna EcoDistrict process, resident “Champions” worked together to craft 2030 vision statements informed by community feedback.

the statement, “We will have succeeded when ...” As part of the national EcoDistricts certification, the Etna Community Organization has committed to publicly reporting their progress using these indicators on a biennial basis. The indicators measure the creation of resilient community infrastructure (such as “millions of gallons of stormwater managed through green infrastructure”), Etna’s contribution to climate change (such as “MMBTU community wide energy consumption”), and issues surrounding social equity (such as “number of permanently affordable dwelling units”).

RT: There is a quantifiable aspect to accountability — the data and how our performance can be measured — but there is also the emotional aspect to accountability. We are a close-knit community with volunteers who invested a tremendous amount of time into the community’s vision. The greatest accountability comes from ourselves. This is not an abstract form of accountability; we feel it, we live it, we breathe it. This is our health; this is our livelihood; this is our future. At our quarterly community meetings, we are responsible for transparently reporting progress and providing updates; that is where we feel the greatest accountability.

MB: The COVID-19 pandemic has highlighted long-established inequities and has been devastating to small-business districts like those in Etna. Have you identified a correlation between Etna’s pandemic response and the EcoDistrict plan?

RT: The multiple crises we face require an adaptive and urgent response. The correlation between the response and the plan is that they are aligned in their priorities. Food insecurity and access to healthy food is critically important whether or not we



Above: Image Credit – Robert Tuñón. Etna Center for Community restoration rendering.



Above: Image Credit – evolveEA

The design proposal for this district features the transformation of an underutilized property and flood-prone streamside parcel into an open-air market and Pine Creek Park. The park is designed to absorb floodwater when Pine Creek rises and acts as a community gathering space during dry times. The market would be a new permanent location for the Etna Farmers Market, where vendors and visitors from the region come to learn about and enjoy food together.



Above: Image Credit – evolveEA

The design proposal for this district features a series of stormwater parklets that lead the community to the riverfront, manage stormwater, and provide opportunities for the community to interact with the stream.

are in a pandemic. Dismantling systemic racism and economic inequality remains at the forefront of our work. These are all issues the Etna EcoDistrict Plan strategically addressed, but it was the strengthening of social networks that has allowed us to navigate this very difficult time.

MB: What advice do you have for emerging professionals pursuing community-focused design and advocating for vulnerable and disenfranchised populations?

RT: Start with education! We found that a co-learning process in which the consultants and the community are listening, exploring, and learning together is an essential step in developing a common understanding of the issues. This strategy leveled the playing field for Etna's residents and built trust amongst the various stakeholders and the consultant

AR: The process is just as important as the plan, and it must be intentionally crafted to build community capacity and empower residents with the knowledge and resources to act on it; otherwise, it is just a pretty document that sits on a shelf. Secondly, nobody knows the community you are working in better than those who call it home. The planning process should be a conversation, not a one-way dialogue. Being a good listener is a critical skill. Technical analysis is important to understanding place, but so is lived experience. Both are essential when working with a community to envision its future.



Monica Blasko, AIA

Blasko is a project architect at qkArchitecture, currently serves as the AIA YAF Advocacy Director, and co-organizes the Women+ in Design Pittsburgh monthly "Breakfast Club" series and "Racist Rebuttals" initiative.

Why materials matter

Interview with Simona Fischer, AIA, MS sustainable design

Simona Fischer, AIA

A registered architect, sustainable design professional, and associate with MSR Design, Fischer develops and tests processes to integrate sustainable design seamlessly into the workflow of architectural practice. Her experience includes project management, Living Building Challenge documentation, and firmwide sustainable design implementation. Fischer has presented at national conferences and lectures regularly at the University of Minnesota. She serves on the Healthy Building Network HomeFree Champions advisory group, which works to build momentum in healthier materials for affordable housing. She co-chairs the AIA Minnesota Committee on the Environment (COTE).

“Materials, and the care with which they are put together, are some of the things I love most about architecture. So I naturally want to see them used well. When I learned about the invisible implications behind every material, I felt strongly that every material selection needs to be grounded in solid reasoning — not just the shiniest new material on the shelf.” — Simona Fischer

Materials make up every component of a building — from hidden insulation to the bathroom floor finish. The ever-expanding world of material selection can overwhelm even the most seasoned specifier. Fischer has worked with AIA Minnesota over the past year to bring the Materials Matter virtual series to the north-central region of the United States. This five-session course delivers the latest research and conversations on selecting healthy, sustainable materials.

KK: How do you develop 20 CEUs of content? That’s like a one-credit college course!

SF: Yeah — it has been intense. The good thing is that we had the outline of a curriculum from Seattle. I was able to talk to some of the developers of that curriculum and get a

sense of their approach in 2016. This field is progressing rapidly — particularly developments in embodied carbon and health. My role was to integrate these new conversations into the sessions so attendees know they are getting the latest knowledge. We have some of the presenters from the original Seattle series who are going to present their latest developments in the field, as well as new presenters from Minnesota and across the country.

KK: What aspects of materials will be discussed?

SF: We will focus on carbon and human health because those conversations have rapidly evolved in recent years. One of the most important realizations in the last couple of years is that these priorities

don’t have to be in opposition to each other. The previous belief in trade-offs created a false sense that you can only

choose one (for example, focusing on operating energy at the expense of high embodied carbon). The experts in this field are having more nuanced conversations these days. We will also talk about designing for deconstruction, the time-value of embodied carbon in 2021, building with natural materials, the use of antimicrobials in a post-COVID world, and processes for bringing all of these considerations into practice.

KK: Will aspects of the Materials Matter course be shaped by specific requirements in the north-central region?

SF: We are going to have a researcher presenting on material impacts in our region. The session outlines strategies for architects, it doesn’t address specific materials. When it comes to selecting materials, there aren’t “good” materials and “bad” materials — well, some are better than others, but it’s a spectrum. There is no sense in telling architects that “from this day forward you must only use these materials and no others” — that just isn’t how creativity (or project constraints) work. Learning a new approach takes time. These sessions teach a set of principles that can be applied to any material you are considering. The architect can set the priority, like deciding they want to use local Minnesota materials for all the beauty

These sessions teach a set of principles that can be applied to any material you are considering.

A History

In 2016, AIA Seattle developed the Materials Matter course (<https://aiaseattle.org/materialsmatter/>), which has expanded to Philadelphia (2017), Texas (2018), and Connecticut (2020).

and meaning that they hold ... and learn to apply a deeper knowledge about non-toxic finishes or how they should be harvested or sourced responsibly. All these aspects shape the decision and how the material gets implemented in the project.

KK: If materials had an ingredient label with calorie counts or daily vitamins, what would you want to see?

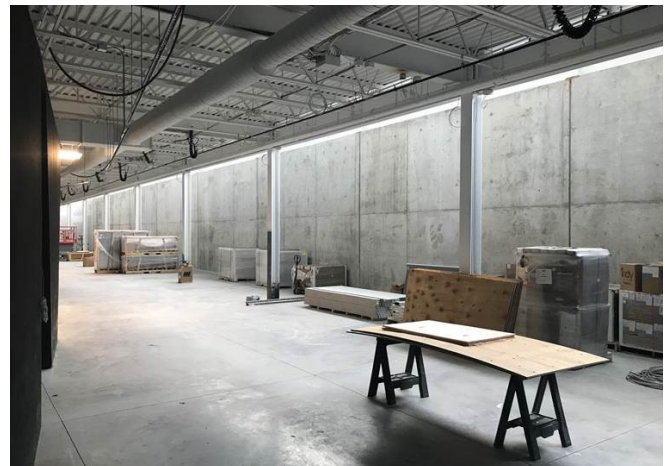
SF: There is actually a [Health Product Declaration](#) that does just this: It is a fairly sophisticated disclosure system for manufacturers who elect to use it. There are several thousands of manufacturers using it on at least some of their products. I do look for products with an HPD — even though sometimes you feel like you need a chemistry degree to understand the level of detail in some qualities. But it is kind of like a food label. And if a food has so many ingredients and you can't pronounce the bottom half, you just see the long list on the label and wonder, "Should I even be eating this?" I feel that way about building products. The HPD is part of our office's entry criteria to our material library.

KK: Do you feel architects are taking this topic seriously?

SF: The number of architects who care about materials is growing. You can see it in the number of signatories to the AIA [2050 Materials Pledge](#). The Living Product Expo is an entire conference devoted to sustainability in building materials.

KK: What advice do you have for architects who want to use better materials but run into cost issues with their clients?

SF: Cost is always a factor. Architects can navigate these discussions by building their baseline understanding of materials in terms of carbon and health impacts and using this baseline to inform better choices across broad material categories, instead of focusing on trying to find that one perfect (but expensive) "green" product. Products change all the time, and there is always something new and exciting. But some basic principles such as using fewer finish materials or designing a wall section with cellulose and mineral wool in place of spray foam or reducing the amount of glazing based on daylight analysis can be done without increasing the cost of the project. There is always a learning curve. But soon, like with many of the other skills we learn and use, it becomes second nature.



Above: MSR Design Materials pallets stored on site before installation. Photo credit – Blue Rock Construction

Want to learn more about how Materials Matter?

Materials Matter (20 CEU)

<https://www.aia-mn.org/events/materials-matter-2021/>

Register for the upcoming AIA Minnesota virtual Continuing Education Series.

Sustainability Metric Drawing Set Packet & Materials Library Entry Criteria and Guide by MSR Design (MSR Design)

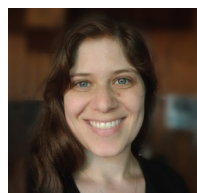
<https://msrdesign.com/generative-impacts/>

Integrate sustainability metrics into your project drawing set with the help of MSR Design's template. MSR Design also shares criteria they apply to products before entering them into their material library. Download these resources on their website.

mindful MATERIALS (free platform)

<http://www.mindfulmaterials.com/>

Join this free platform that aggregates "information on human health and environmental impacts of products from leading manufacturers." This effort expanded from that of sustainable materials specialists at HKS. Read Nancy Hulse's 2014 article introducing Materials Matter. (<https://www.aiadallas.org/v/blog-detail/Materials-Matter/h3/>)



Katie Kangas, AIA + NCARB

Kangas founded Pasque Architecture to provide story-centered architecture and design. She is building a process-centered practice to provide simple functional design that is beautiful and inspires.

Investing in emerging professionals

AIA College of Fellows EP component grant program

Established in 1952, the AIA College of Fellows has a storied history of giving back to and mentoring emerging professionals in the AIA. It's no surprise that the AIA College of Fellows has established a fund called the COF Emerging Professionals Component Grant to invest in programs that support emerging professional members at the component level.

The YAF's Knowledge Workgroup has gathered information from four successful recipients from 2020 to showcase creative programming and provide tips for future applicants. We encourage all components to take advantage of this opportunity. Applications are anticipated to be available this spring.



Above: AIA Arizona Associates Conference Poster Photo during a conference session

AIA Arizona

Program/initiative name: 2021 AIA Associates Conference

Applicant name/position: Julianna Sorrell, Assoc, AIA and 2020 AIA PHX Metro Associate Director

Grant amount requested: \$5,000

Grant amount received: \$4,000

Program/initiative goals: Create an environment that encourages leadership, mentorship, fellowship, and career development opportunities among emerging and practicing professionals in the field of design and architecture.

How did you hear about the COF EP Grant?

The COF EP Grant through the AIA National website.

How has the grant helped your AIA chapter and your program/initiative in 2020 and beyond?

The grant has helped AIA Arizona and the 2021 AIA Associate Conference grow immensely. The executive planning committee is working to expand the scope and influence of the 2021 conference, and the grant has given us the opportunity to do that in ways that we could not have dreamed imaginable before.

Why do you feel your application was chosen, and what strategies did you use during the application process?

The application was strategically and clearly ordered by the submission topics and directly addressed each question posed. The graphic design concept integrated AIA brand standards as well as marketing campaign graphics and photography from the 2020 Associate Conference archive. We feel this application was selected because it successfully represented a program that has existing support and immense potential to grow and foster leadership, fellowship, and mentorship in our profession.

What recommendations or tips can you provide for future applicants?

Use this opportunity to strengthen an existing, vital program to your component or pitch an idea for a new event that has the potential to be. When we learned of the grant, we assessed whether it would be more beneficial to create anew or expand on what we had. We're proud to announce the 13th Annual AIA Associate Conference was held virtually on Feb. 26.

AIA Cleveland

Program/initiative name: Coffee with the Fellows

Applicant name/position: Megan Haftl, AIA, project architect at Perspectus, director of young architects and associate members for AIA Cleveland, COTE co-chair of AIA Cleveland

Grant amount requested: \$400

Grant amount received: \$400

Program/initiative goals: Coffee with the Fellows seeks to bridge the gap between emerging professionals and AIA fellows, foster mentorship, create a platform for EPs to demonstrate leadership and presentation skills, and highlight the expertise and value fellows can share with the next generation of leaders.

How did you hear about the COF EP Grant?

The previous AIA Cleveland YAAM Director applied for and received the grant.

How has the grant helped your AIA chapter and your program/initiative in 2020 and beyond?

Due to the grant, Coffee with the Fellows now has a website and a SoundCloud account to archive the conversations between EPs and Fellows, significantly expanding the reach of the program. Volume 01 wrapped up in November, and 2021's Volume 02 kicked off in February to great success.

Using the grant to fund the website and SoundCloud account meant that the chapter was able to offer the program free of charge to AIA members, students, and the public while also providing one LU for four of the five sessions. Providing free learning units to members and non-members is a tremendous value, especially during a recession.

Visit [our website](#) to listen to the inspiring conversations.

Why do you feel your application was chosen, and what strategies did you use during the application process?

The application was very specific about the program goals, the amount of money needed, and what the funds would be used for. The application also stated that the program would be free to AIA members, students, and the public, and because of that, the grant was needed to help fund promotional materials and archival efforts to broaden the reach of the series.

Additionally, the application showed that planning for the series was underway. The application listed confirmed participants and what their roles would be. It was noted that the program



AIA Cleveland Coffee with the Fellows program participants



Above: AIA Marianas team, left to right: Inna Wiese (component president), Francis Sinon, Elmer Prudente, Dominic Lizama, Cherika Garcia, Elsa Kuo, Aaron Burger

was intended as a monthly series going beyond 2020 to continuously provide value to chapter EPs and members.

Lastly, the grant application asked for an overview of the chapter's YAF/NAC background, which highlighted AIA Cleveland's years of successful and ongoing YAAM programming and events.

What recommendations or tips can you provide for future applicants?

Discuss the value and impact the program will have on emerging professionals. Be specific in the goals and objectives the program hopes to achieve and what the funds will be used for. If applicable, highlight recent YAF/NAC-focused programming to demonstrate the success the chapter has achieved and its plans to continue success with EPs.

AIA Marianas

Program/initiative name:

A'H.E.R.O. (AIA Helping Emerging Professionals with Resilience Opportunities) Awareness Campaign

Applicant name/position: Francis Sinon, Assoc. AIA, associate board member

Grant amount requested: \$4,000

Grant amount received: \$4,000

Program/initiative goals:

The goal of the campaign is job security for the emerging professionals whose untenured status during this pandemic makes them susceptible to furloughs, reduced hours and benefits, and layoffs. The campaign provides optimism to the EP group, by raising awareness that community outreach and education will create opportunities, opportunities will produce projects, and projects will lead to tenure.

How did you hear about the COF EP Grant?

AIA website.

How has the grant helped your AIA chapter and your program/initiative in 2020 and beyond?

The grant helped the component gain exposure to the public in print and social. This campaign not only promotes the profession, but also educates the public of what architects can do for the community. The grant allowed us to deliver the campaign up to the end of 2021. The remaining amount was allocated to purchase ARE review materials for the EPs.

Why do you feel your application was chosen, and what strategies did you use during the application process?

It was a response to a current situation. Observe how the world, the community, the profession reacts to the issue. Research and find the key to how the component can be a part of the solution. Listen and get input from peers and mentors, especially from those who will benefit from the program.

What recommendations or tips can you provide for future applicants?

Identify an issue that the component can help resolve. Give specific resources that will be involved in the program to justify the amount requested. Put your heart into it and pray for the best.



Above: AIA Marianas awareness campaign published in the local newspaper

AIA New York State

Program/initiative name: EP Architalk – the Podcast

Applicant name/position: Cara Longobardi, associate director of member services

Grant amount requested: \$3,110

Grant amount received: \$3,110

Program/initiative goals:

While getting together in a live format is always ideal, the current world we live in – from social distancing to busy schedules and demanding careers – can make it difficult to achieve. We also feel that an in-person event does not allow for contact with a large percentage of our emerging professional members. Podcasting is a format that is accessible to all and available on demand at no cost. We know that people are using podcasts more and more for both entertainment and professional development. According to Podcast Trends 2019, 82.4 percent of people listen to podcasts for more than seven hours each week. The 2019 Digital News Report found that 54 percent of 18- to 24-year-olds and 53 percent of 25- to 34-year-olds have used a podcast within the last month. This age range is the key demographic of emerging professionals within our membership.

The podcast addresses a specific topic in each episode, with the host bringing on a guest subject-matter expert related to that specific episode. Subjects will include such topics as the path to licensure, burnout, mentorship, equity, diversity, and inclusion within the profession, working through COVID-19-related furlough and even alternate design paths.



Above: AIA New York State EP Architalk podcast with Talisha Sainvil, AIA, NOMA, NCARB, LEED, and guest Ryan Gann, Associate AIA

How did you hear about the COF EP Grant?

Component connect/previous recipients

How has the grant helped your AIA chapter and your program/initiative in 2020 and beyond?

With the 2020 funding as well as 2018 and 2019, the COF grant has provided us with the ability to reach emerging professionals with topics very specific to them and their careers, while giving us the ability to take cost into account and offer no-cost programming for them. It's helped us to reach a larger audience than just the standard group of participants.

Why do you feel your application was chosen, and what strategies did you use during the application process?

We had a unique concept that expanded beyond a singular event. We plan to take this and continue on into 2021 and beyond, while creating content that is accessible to EPs around the country or even the world on demand. While putting together the application, our EP Committee met regularly to discuss relevant topics, and I as a staff person did extensive research on the podcasting world, from equipment to best practices to editing.

What recommendations or tips can you provide for future applicants?

Don't be afraid to apply. The worst thing that can happen is you are not a recipient, and you have the year to rework your idea and proposal. Develop a unique concept.



Jason Takeuchi, AIA, NCARB, NOMA

Takeuchi is a project architect at Ferraro Choi and Associates in Honolulu and the AIA Young Architects Forum Knowledge Director.

Bring the outside in

An approach to accelerating climate action through design

Imagine a [crane with six arms](#). It continuously builds and unbuilds a tower. Rather than orchestrating a skyscraper's construction, this crane regulates the flow of energy from a solar or wind farm into the electrical grid. It absorbs energy by lifting blocks from various locations around its base and stacking them into a single tower. Kinetic energy is released as the crane deconstructs the tower, returning the blocks to the ground. The higher the tower grows, the more potential energy is stored within it.

As the COVID pandemic drags on, it can sometimes feel like we are all building and unbuilding our own personal energy towers as our frustration at being trapped at home ebbs and flows. In a sense, the pandemic has built an enormous energy storage tower out of pent-up frustrations. 2020 was a year of costly records. In terms of social justice, the protests following George Floyd's police killing were the [broadest in U.S. history](#). In terms of climate change, 2020 tied with 2016 as the [hottest year on record](#), and it whizzed past the previous record for the number of [Atlantic hurricanes](#) in one season. In terms of health disparities, African Americans and Hispanics/Latinx have been twice as likely as whites to [die of COVID](#).

Now that we have entered a new year, a new presidency, and a new phase of the COVID pandemic, the question becomes: Can we shape the way we release the pent-up energy from 2020, so that 2021 becomes known as the year we came together to address the most significant challenges of our generation?

Outward-Looking Design

Architecture cannot solve these problems on its own. But it has a role to play. Architects have shown time and again how thoughtful placemaking can create conditions that support and promote environmental, social, and health benefits.

The key is to position the design as outward-looking — acknowledging and responding to community needs. Whether the design team plans for it or not, every building has a ripple effect on its surroundings. Building design and operations influence neighborhood air quality, urban heat island effect, flood risk, and access to active modes of transportation, among other factors. The key is to deliver building designs that reflect and amplify neighborhood-scale goals for promoting resilience, equity, and health.

Applying a broader lens to building design and renovation can seem a daunting task. After all, climate change, equity, and chronic disease are three massive and complex societal challenges. It may seem easier to work on one at a time. In reality, though, it is not sufficient to design a building to maximize ventilation and airflow to reduce the risk of infectious disease without considering the energy code. Likewise, projects seeking to reduce exposure to outdoor air pollution or enhance a property's resilience to heat and flooding events will need to align their design with their neighbors' approach to protect their own occupants.



Above: Photo credit – Alexey Derevtsov

Young Architects are Natural Leaders in this Space

Young architects are the natural torchbearers for this shift in mindset for two reasons. First, they are more invested in environmental and social movements than older generations. [Seventy percent of young adults](#) worry about climate change, compared with 55 percent of adults 55 or older. They were [three times more likely](#) (13 percent vs. 4 percent) than adults 50 to 64 to contact a public official or attend a social justice protest or rally last summer. And they have shown the effectiveness of their organizing skills by launching successful social initiatives like the Sunrise Movement and Black Lives Matter.

Second, and perhaps more significantly, young adults' strong interest in intersecting environmental and social challenges has taught them how to sit with complexity. We cannot achieve climate resilience, equity, and chronic disease reduction by tackling them one at a time. The only way to accelerate progress

on one topic is to understand and address the confluence of forces at play for all of them in any given location.

Starting the Conversation

Over the past year, the AIA has begun to support young architects who wish to bring their environmental and social values into the office. For example, the revised AIA [climate action plan](#) defines “the climate imperative” as “a zero-carbon, equitable, resilient, and healthy built environment.” The AIA also co-produced 10 case studies alongside partner organizations supporting the [Healthy Communities Joint Call to Action](#). These briefs share examples of ways to start a conversation about aligning design decisions at the intersection of community environmental, social, and health needs.

Now is the time to start those conversations — before the tower of energy we built through the pandemic dissipates and we return to a place of stasis.



Adele Houghton, AIA, MPH, LEED AP BD+C, O+M, ND

is president of Biositu, LLC in Houston and a doctor of public health student at Harvard University. Houghton helps clients identify opportunities to use green and healthy buildings as a catalyst for accelerating local climate action and chronic disease reduction.

Leveraging technology for expertise in sustainability

The beauty within a career in architecture is the ability to change the world around us. Every architect has their own strengths and passions that they bring to society.

In the United States, buildings consume [40 percent](#) of all energy used, which is more energy than from industry and transportation. So it is not surprising that architects focus on sustainable and resilient architecture to make a difference in the impact buildings have on the environment. But as a student or young professional, how do you begin to focus your energy on resilient design or specializing in sustainable architecture? How can you start to build this specialty early in your career?

One of the major advantages young professionals have is their natural ability to understand a range of technology. This can bring new approaches and ideas that influence process, efficiency, and overall design. But how can technology lead to a specialized career focus in sustainable and resilient architecture? Technology is always changing, growing, and being more integrated into the built environment. Young professionals coming into the architectural profession will always be bringing new tools to make the profession better. Leveraging that ease with technology can shape not only the design of the future, but also one's career path.

Knowledge

The first part is understanding the knowledge you've gained from your recent college education and the new technology expertise every young professional brings to a firm. You may not have the years of experience yet that it takes to become an expert in this area of the field, but you have more groundwork than that of previous generations. Most modern architectural programs have sustainability-related courses as part of their curriculums. Being able to read psychrometric charts and understanding how materials affect a building's energy use are a solid foundation for focusing a career in sustainable design. There are a multitude of avenues you can take regarding this initial understanding. The AIA is a great starting point for resources relating to climate action and organizes the information into categories.

This foundation can relate to a number of building energy modeling software that can be tied directly into BIM models already being generated by a design team. Sefaira and [cove.tool](#) are some [examples of software](#) that are used to directly

connect typical BIM models with energy-modeling analysis. As young professionals, you can offer a great deal of value to a firm early in your career if you can harness your initial understanding of sustainable data while leveraging the use of a variety of sustainability software.

But how is this helpful? By having this understanding of data and technology, you can become a central resource within the office. It can guide you to become involved in sustainable projects earlier in your career, increasing your experience in that sector faster. You could also become an expert who focuses on energy modeling for the projects in your office. This creates a niche to carve your own path, see how data changes with different building types, and become a leader within the office.

Coding and Generative Design

The traditional initial design process was centered on a method of trial and error. This takes time and effort, and in a world where schedules are getting shorter and clients want information faster, there is simply not the time for endless iterations. Then factor in the decisions and constraints when trying to design a high-energy-performing building. Simple building form moves can have a huge impact on factors such as solar heat gain, solar generation, wind paths, etc. One way young professionals can help this workflow is by learning coding programs like Grasshopper, Rhino, and Dynamo.

This is software that lets you put in constraints like building footprint, heights, and other more structured factors. But you can also take into account specific project site location, weather data, and sustainable goals. By putting in constraints and setting design goals through coding software, the computer can run the trial-and-error process of generating building forms while also knowing what that does for building performance. This can save a firm a lot of money by not going through the more traditional trial-and-error process, while providing the design team with more precise metrics regarding a building's potential performance from an early stage in the design process.

However, the profession is still in need of designers with knowledge of these coding programs, being able to code correctly to gain the right knowledge and what that data means when it is provided. Students have a great opportunity

to learn some of these programs while in school and bring new knowledge into a firm. Like the energy-modeling example, this can start your path of generative architecture early, by either integrating it into the normal workflow or becoming the office expert taking similar code and manipulating it for a variety of project types. Designing through this generative lens can make you stand out from the technical aspect while improving general building performance.

A good project example is Virginia Tech's first building for its new [Innovation Campus](#). The design team leveraged generative design and coding to determine a unique building form that focused on maximizing this particular site's potential while keeping the design centered on the principles of sustainability, health and wellness, green and social spaces, accessibility, connectivity, flexibility, and integrated technology. For instance, different types and sizes of photocells, shades, glass SHGC types, horizontal fins, and vertical fins were analyzed as part of sustainable design criteria to create building form iterations. Not all forms met the overall building performance criteria, but those were filtered out while the program ran. So in a matter of hours rather than months or years, a building form that meets the client's energy expectations could be presented.

Renovation and Adaptive Reuse

The profession is not solely based on and supported by new buildings. Renovations and preservation of existing buildings are a big component. Your passion for sustainability may be routed more toward existing structures and historical preservation. There are modern materials that can be used in renovations to increase a building's energy performance, and salvaging existing building structures rather than building new can reduce embodied carbon emissions. Embodied carbon is the carbon footprint of a material from cradle to grave. Embodied carbon make up a large fraction of construction emissions. For a new building, it accounts for [20-50% of a whole life](#) (embodied and operational) carbon emissions. There are technology platforms being integrated into the architectural profession that young professionals can learn and use to take companies to the next level of design. Some embodied carbon software programs include [Tally](#), EC3, EDGE, OneClick LCA, and Beacon.

Tally, for example, is an application that allows architects and engineers to quantify the environmental impact of building materials for whole-building analysis as well as comparative analyses of design options. It can be used for three types of analysis: whole-building Life Cycle Assessment, design-option comparison, and material selection. KieranTimberlake and Thinkstep used Tally in their 2016 R+D Award-winning design of the Consortium for Building Energy Innovation in Philadelphia. They used Tally to analyze two cladding materials, corrugated shingles and translucent panels.

[EDGE](#) (Excellence in Design for Greater Efficiencies) is another simple and free software that can be used for new construction as well as adaptive-reuse projects. Simple tools like this are great for showing clients the energy benefits behind design options. EDGE generates clear graphics that can show the difference between a base building and an improved design. A young professional who knows the free- and/or low-cost software tools available for projects can offer to integrate them into the design workflow and become a reference for the office in using these tools for other work.

If you want to focus your career on sustainable and resilient architecture, why not take control when you start in the profession? It is in your favor to align your personal passions with the tools and new technology available to help cultivate a firm's approach. If you are still in college, why not try out one of the free tools mentioned above on one of your projects? It gives you practice, training, and something unique for your portfolio.

Resources:

<https://circularecology.com/embodied-carbon.html>

<https://carbon-positive.org/tools/>

<https://www.smithgroup.com/news/2020/design-of-first-virginia-tech-innovation-campus-building-centers-on-sustainability>

https://www.architectmagazine.com/technology/this-week-in-tech-smithgroup-reveals-first-virginia-tech-innovation-campus-renderings_o

<https://www.architectscan.org/>

https://www1.eere.energy.gov/buildings/publications/pdfs/corporate/bt_stateindustry.pdf

<https://www.sciencedirect.com/science/article/pii/S1110016817301734>



Katelyn Rossier, AIA

Rossier is an architect at SmithGroup in Pittsburgh. She is a graduate of Kent State University and manages the blog mentorarchitect.com.

Architects, Stop Calling It “Managed Retreat”

The majority of U.S. coastlines are being threatened by sea level rise at an alarming rate. Architects are now more engaged in a discussion about managing the “retreat” of entire communities from vulnerable coastlines. But the language they continue to use is perpetuating a top-down approach.



Above: Nuisance flooding in Lindenhurst, N.Y., 2018. Image credit – Dan Horn

Sea level rise and the compounding risks of climate change will bring the greatest risk to front-line and environmental justice communities in modern times. The overwhelming science shows that the current and future increase in sea levels, projected through 2100, will be detrimental to low-lying areas. One thing is certain: These communities will bear the brunt of the impacts if nothing is done about it.

Moving is financially, psychologically, and politically difficult, but it will need to be seriously considered to protect the communities that reside there. And while it may be easier to talk about elevating homes, building large and expensive infrastructure to protect the areas with interventions like sea walls and offshore wave attenuation structures, these are simply costly temporary fixes, putting off the inevitable.

Communities face an ever-increasing risk of large-scale governmental initiatives tearing generations of rich culture,



Above: Buyout properties that have been abandoned in South Lindenhurst, N.Y., 2018. Image credit – Dan Horn

character, and livelihoods apart. “Managed retreat” is to blame, the “official” policy terminology for the relocation of entire neighborhoods out of high-hazard, repetitive-loss areas. The verbiage depicts the destructive approach taken by nationwide programs to change the way people reside near coastlines.

Buyouts vs. Managed Retreat

Built environment professionals have talked about relocating entire communities away from vulnerable coastlines for decades as the science behind climate change evolved. The discussion of relocating coastal communities rose out of necessity after Superstorm Sandy ravaged the East Coast of the U.S. in 2012. In its aftermath, the federal government, through state-sponsored programs, provided affected homeowners financing to rebuild and, in the most severely damaged areas, offered to “buy out” these high-risk properties in the floodplain. Several hundred homes in the communities of Fox Beach, Ocean Breeze, and [Oakwood Beach](#) on New York’s

Staten Island were a few in particular where a majority of the residents collectively [chose to leave for good](#). According to Next City, “Under the program, properties that were purchased should have been maintained as open space or transformed into coastal buffer zones, parks and other non-residential uses that will help protect nearby communities from the impact of extreme weather.”¹

The term “buyout” has been around for decades. It is the policy term FEMA and other governmental authorities use to describe areas where individual residential properties within a state-run recovery and resiliency program voluntarily opt to be purchased by the state. Where the terms “buyout” and “managed retreat” differ is in their scale. Buyout can mean as little as one property or as many as a few hundred. Managed retreat, on the other hand, refers to entire coastal towns having to leave because it becomes impractical to remain. This could involve thousands of properties and families. As the climate has evolved in its grim predictions, so has the language to describe interventions to combat it. Managed retreat has become the seemingly official policy and architectural lexicon.

As called out in Politico, “Experts agree that ‘managed retreat’ is a terrible term that gets in the way of selling the idea to coastal communities and their elected representatives. After all, who wants to give up and ‘retreat’”? Further, it goes on to say “terminology may seem silly, but given that political decisions are driven by public sentiment, finding a less defeatist alternative for managed retreat may be key to making it viable.”² Experts in the field of climate change science and members of the architecture-engineering-construction community seem to have adopted “managed retreat” without fully comprehending the current and future implications of doing so. It implies a top-down, government-directed approach. Front-line and environmental justice communities who are the most at risk from sea level rise and other hazards deserve a more inclusive and thoughtful title for something that may upend their lives forever. The time is now to begin to realize the impact language can have on these conversations with communities moving forward.

Enacting Change Now

To understand the impetus for changing this term and why it matters, there are a series of critical questions to ask: Who is managing the retreat? What are they “managing”? What is the level of community involvement, and how is it sustained? How



Above: Bergen Beach was severely damaged during Superstorm Sandy in 2012 and remains vulnerable to future storms. Image credit: Dan Horn

will the local or state government gain the trust of those slated to “retreat”? Who decides who stays and who goes? Communities, local leaders and advocates, and design professionals must come together now to begin forming more empowering and empathetic terms of engagement. This will all stem from earning the community’s trust. Unfortunately, architects overall have a poor history of connecting with the communities that they serve. Community engagement is usually granted only a small part of large projects. It requires much more than that. A thoughtful and sustained campaign to hear the community’s concerns and ideas can bring alternative solutions to the table. The issue ahead is twofold: Residents who will be affected by coastal flooding need the information and tools necessary to make their own informed decisions, and architects need to be more attuned to what community priorities actually are, instead of driving their own prerogative. A top-down approach does not fully recognize the priorities and needs of the community. Professionals involved in outreach typically only scratch the surface, and cost more time and money, something that proper outreach and engagement are never afforded. Trust is earned when the outsiders can

understand the positive and negative impacts of the proposal. They hear stories, gather data, hold meetings, and synthesize all the information given to them by the community. This can take years, sometimes decades. It can never be rushed to simply fulfill artificial project requirements.

Architects, Step Up

A realistic guide for starting a conversation

Architects have an ethical and moral responsibility to protect the public's health, safety, and welfare. They can be uniquely positioned to earn the community's trust if they approach it the right way. Envisioning all the opportunities within a project is exactly what is needed at this critical juncture and must be done with communities lighting the path ahead. By encouraging ground-up conversations within the community, they can help members navigate tough decisions. Everything that architects do, or don't do, will affect these conversations moving forward. So how can architects be involved?

Architects work in the built environment and must go through many regulatory hoops to get projects approved. Every interaction with a plan examiner, inspector, client, community advocate, and contractor is a means by which architects can begin a small conversation about the impact to the adjacent community. The best time to have this conversation is at the beginning of the design process because that's when the community's vision can be the most realized. However, advocacy is impactful at any stage of a project. Architects must recognize that the people most affected by decisions concerning this so-called retreat play a pivotal role in these conversations moving forward.

First, the profession must revisit how it serves communities. Architects must put them at the center of decision-making, realizing a holistic and equitable approach to addressing sea level rise and other consequences of climate change. Then, through working together, the community should inform a new term to replace "managed retreat."

Footnotes

¹ – Graham T. Beck, "[This Staten Island Neighborhood Is About to Become a Wetland](#)", (Nextcity.org, 2013)

² – Yuliya Panfil, "[The Case for 'Managed Retreat'](#)", (Politico, 2020)



Daniel Horn, AIA, LEED GA, SEED

Horn is a New York-based architect at ESKW/ Architects who focuses on sustainability and long-term community resilience. He is also co-founder of ORLI+, an emerging design collective working at the intersection of community empowerment, advocacy, and resilience.

Climate action: A multifaceted road to impactful change



Kira Gould, Allied AIA, LEED AP, is a writer, strategist, and convener dedicated to advancing design leadership, climate action, and climate justice. Through [Kira Gould CONNECT](#), she provides strategic communications for leaders designing, developing, and building a sustainable future. Gould is a senior fellow with [Architecture 2030](#) and serves on the AIA Committee on the Environment national advisory group, for which she chaired in 2007. Prior to starting her consulting work in 2016, Gould directed communications for [William McDonough + Partners](#) and [Gould Evans](#) and served as managing editor at Metropolis magazine. Gould co-authored “[Women in Green: Voices of Sustainable Design](#)” (2007) with Lance Hosey and is today the co-host of the [Design the Future podcast](#) with Lindsay Baker, which features women and feminine leadership. She grew up in Lawrence, Kan., and has spent her adult life in New York, Boston, and the Bay Area; she’s lived in Oakland for the past decade.

BP: Hi, Kira! Thank you for taking the opportunity to have this conversation. You have a unique perspective on design and the built environment as it relates to sustainability. How did you find yourself in the field of sustainable design?

KG: My father is an architect, and my mother was an interior designer and artist, so I was always interested in design and placemaking, and I always wanted to write. My undergraduate degree was in journalism, and I moved to New York to work in magazines.

I found a graduate program that bridged architecture and writing, at Parsons School of Design (now part of the New School); it was a master of arts degree in architectural criticism. In the course of my studies there, professor Jean Gardner introduced me to an understanding of humans as a part of nature, which remapped my understanding of what architecture and human settlement could be. These understandings are part of the framework that I believe is finally becoming more broadly understood as designers and society begin to turn from delayed, uncomfortable awareness and blame about climate change to collective, productive action and regeneration.

I found a work family at [Metropolis magazine](#); they were beginning to explore sustainability in a meaningful way. Metropolis was one of the first design magazines to cover the topic deeply and regularly. I migrated my work to working within architecture firms in a communications capacity (first Gould Evans, a firm co-founded by my father, and then William McDonough + Partners). After that, I stepped out of

the in-house role to work as a consultant. Through Kira Gould CONNECT, my consultancy, I advise firms and leaders on strategy, communications, and knowledge leadership. I write whenever I can, and I find myself in the role of connector and convener often, through firms, with AIA and COTE, and in other industry and climate groups. Increasingly, that has a policy/advocacy aspect to it; to design a healthy, equitable, regenerative future, we’re going to need to rewrite some rules.

BP: What do the two phrases “climate action” and “climate justice” mean to you and your work?

KG: I see climate action as the basic human responsibility to address global warming and the threat it poses to our species on Earth. I see climate justice as the understanding that all people and communities should be equally protected from harm from environmental and climate threats. The goal is a healthy, equitable, regenerative future *for all*. The challenge for architects and the AEC industry, as well as for all people, is to lead climate action in a way that is inclusive of climate justice.

BP: You have quite a deep history of working on these challenging issues in AIA’s Committee on the Environment (COTE). What is your current role and mission? And how did you get involved?

KG: I got involved in COTE at the local level first, when the chapter was forming in New York City, where I spent the first decade of my career. That translated to connecting with people active at the national level. I was very passionate about the sustainable-buildings movement and the potential for architects to take the lead. I joined the national COTE leadership group (the advisory group) in the mid-2000s and



served as chair in 2007. It was a very exciting time, but it was also frustrating because sustainability was very siloed in the profession and in AIA.

I brought a communications lens to COTE: I helped strengthen the newsletter and media and public communications, and I helped connect the network of COTE chapters around the country. We had 45 local and state COTE chapters at the time, and they were really doing amazing things. We set up a regional network and had regular calls so that chapters could share best practices.

I had the opportunity to get back involved with COTE in 2017, and I stepped in to help with the newsletter again. By this point, social media had matured, so the opportunities to make that eblast reach much farther seemed too great to resist. I applied to join the leadership group again and was brought on in 2020. We refined our mission last year, and now we are stepping up to roadmap the new mandate we've set for ourselves around climate action and climate justice. The COTE network of chapters is thriving — there are 55 now — and they are vibrant groups.

BP: How would you encourage emerging professionals, in actionable and approachable ways, to get engaged with climate action within AIA and/or their firms?

KG: There are so many opportunities for young professionals to engage locally and regionally, no matter where they are. If they are interested in holistic design excellence toward climate action and climate justice, I would suggest that they

explore whether their local component has a Committee on the Environment chapter (or a group with similar aims, some have different names). In my experience (and I've engaged with local chapters in New York, Boston, San Francisco, and East Bay in California), these chapters tend to be vibrant. These groups are often focused on local advocacy and education. And with COTE chapter events being virtual lately, this means that it's possible to tap into events in many locations, too.

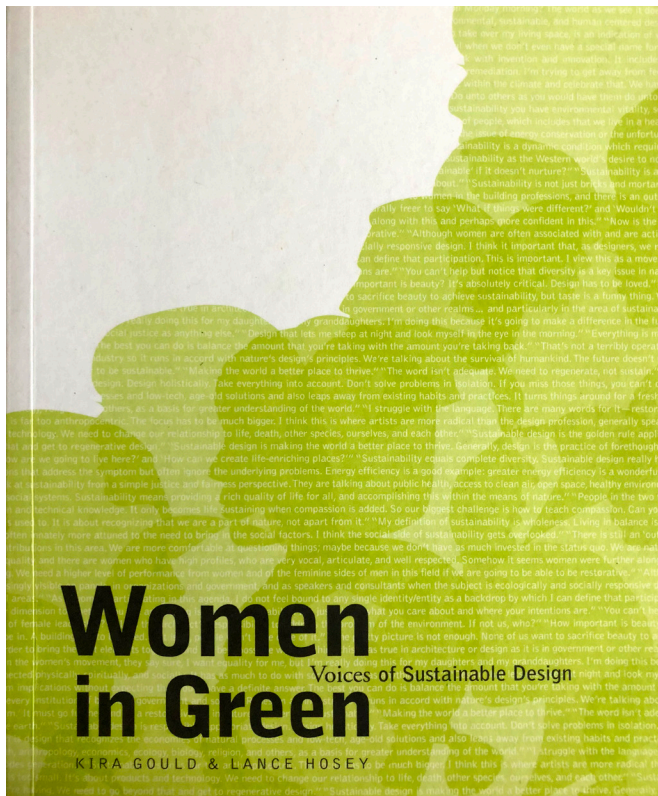
There are a number of other groups (which often collaborate with COTE) that may also be of interest, such as Passive House groups and the Carbon Leadership Forum. This is an ideal time to find groups and activities that mesh climate and social justice and equity. Some firms have activities around these topics, and that's a great place to start. One group I'm following is the NAACP's [Centering Equity in the Sustainable Building Sector](#).

I have found ways to collaborate and cross paths with the brilliant [Architecture 2030](#) team for years. Last year, I moderated a panel for their Teach-In, and I'm excited to help mobilize architects to support COP-26 this fall, at which Architecture 2030 will have a presence.

Another thing to think about is what sort of training and knowledge might be of value as we experience increasing episodes of climate impacts that often result in community damage. For example, many AIA chapters offer [Safety Assessment Program \(SAP\) training](#).

BP: Perspective and representation play a role in creating a holistic and inclusive design. As a co-host of “Woman in Sustainability- [Design the Future](#)” podcast and a co-author of the book “[Women in Green: Voices of Sustainable Design](#),”





what role do you think having representation of historically underrepresented voices such as women and BIPOC play in these conversations on design and sustainability?

KG: Lance Hosey and I wrote “Women in Green” before diversity and inclusion efforts were robust and well before identitarianism had taken hold in the way we see now. The important thing about diverse voices (including age, gender, ethnicity, race) is that most activities (business, science, architecture, education) benefit from diverse perspectives, ways of thinking, and ways of leading.

With the book and the podcast, which I host with Linsay Baker I wanted to make room for female perspectives and leadership patterns so that we can all learn from them. In the case of the climate crisis, I think we have a special responsibility to consider and implement all the wisdom we can. We need systems that actively engage all these perspectives, especially perspectives that have been excluded in the past, such as, in architecture, those of BIPOC and women. That said, I think of “diversity” as a broader goal in the world of design and in the AEC industry, one that includes thinking differently. Because

I think that we know we need to shift the mindset — and aspects of the economic system. For these shifts, we need to think about learning from natural systems (which rarely thrive without diversity) and even understanding economics as dynamic systems. That might sound like it’s not about J.E.D.I. goals that have to do with who’s in the profession and how we’re designing for our clients and all their stakeholders, but I see a connection there.

BP: Given that you [practice as a consultant](#) for various firms to help people and firms with storytelling and thought leadership, what would you say are the best business cases for climate action?

KG: Every act of building is a climate action. Architects, contractors, and engineers have a responsibility to talk to clients about risks and opportunities surrounding choices about project impacts, great and small. These include what climate justice looks like in any given community. Substantively addressing this — in ways that save public and private clients money on resources and more — gives firms an advantage now. And it positions architects and their clients to be ready to face the changing world ahead, in which we will almost certainly see not only climate impacts to all communities and businesses, but a reshaping regulatory landscape and even a remapped economic framework. Addressing climate action and climate justice proactively is a pathway to thrive, for every business and community.

BP: Your path into this industry of architecture, design, and the built environment may not look like the traditional architectural path. What advice would you give to an emerging professional who may want to pursue alternate career paths within our industry as a trailblazer like yourself?

KG: For emerging professionals, I think the most potent reality is that notions of a traditional path are fading. The power of design is immense, but the architecture field is at an important moment, in this decade, I think. It will either embrace and engage its leadership potential or begin to recede. The ability to address the climate crisis for clients and communities is an immense responsibility, but failing to take that on could leave this profession in a highly marginalized position. Interestingly, many practices are well positioned to step up to this kind of leadership, and even in practices that are just embracing this, there is a great deal of room for emerging leaders to help define the pathways forward.



Beresford Pratt, AIA, NOMA

Pratt is the AIA Young Architects Forum Communications Director. He is an architect and associate with Ayers Saint Gross. He focuses on higher education design with a specialty in active learning spaces and co-leads multiple J.E.D.I based pipeline initiatives.

Going back to the basics — water sustainability

The simplest way to help the climate is by wasting less. Society has improved production so that we live an abundant, comfortable life. Contributing to the climate is not about strict disciplines or regressing to living in discomfort; instead, it is about designing better.

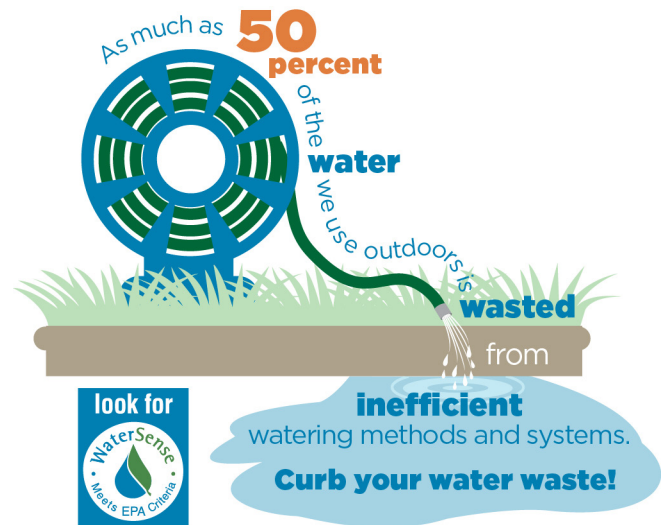
California was a desert, and we nested here for its good weather and brought our own comforts. Architects a century ago infused this undesirable desert with materials and plants to artificially form this oasis. As popularity grew, so did the demand for imported water, creating an unsustainable habitat. Sustainable building isn't just the carbon-neutral materials purchased for assembly; it is also the way space is employed during its lifespan. The saying goes that the most sustainable buildings are ones that are still in use rather than demolished, but have we considered the cost of resources to maintain operations?

Solar and battery cells are the current hot topic of sustainable technology. The snowstorm in Texas has shown how important solar energy could be in providing livelihoods to owners and neighbors when utility infrastructure fails. What would be the equivalent of solar energy in water sustainability? If power outages are a disaster, what about water shortages?

Because commercial and industrial water uses have expert studies and vary widely, the easiest entry for general water sustainability is residential design. Water sustainability can be accomplished by either water reuse or water filtration.

Water reuse is simply accounting for each drop of water to achieve maximal utilization. What if water that you use once in showers or laundry machines could be reused a second time for gardening or flushing the toilet? The average American family uses 320 gallons of water a day, and 30% of that is used for softscape (epa.gov). Although unappealing drought-tolerant plants could cut watering needs, what if we designed for reuse of 70% of in-house wastewater for outdoors?

In a step further, we could collect percolated runoff in the softscape, installing a sewer ejector to pump that water for landscape irrigation again! Similar to how we design drains to



Above: Image Credit – EPA WaterSense

collect moisture at the bottom of basement footings, we can collect unabsorbed percolated irrigation runoff at the bottom of soil beds and planter boxes. By capturing the 50% of irrigation

By capturing the 50% of irrigation inefficiency, we would design each gallon input to produce twice the output. Not bad for a 200% return on investment.

inefficiency, we would design each gallon input to produce twice the output. Not bad for a 200% return on investment.

The second concept, water filtration, is no breakthrough.

Every city has water treatment infrastructure, but how much do we know about it? Basically, wastewater is treated in three stages. The primary stage is to separate solids from the wastewater and perhaps anaerobic methods to reduce odor. The secondary stage involves aerobic treatment and bacterial decomposition of the organics in the water. The tertiary stage is sanitization, which is commonly done with chlorine, UV, or reverse osmosis. Septic tanks are a two-step system and use earth for tertiary treatment.



Above: Sustainable Water Interior tidal flow at the Port of Portland.

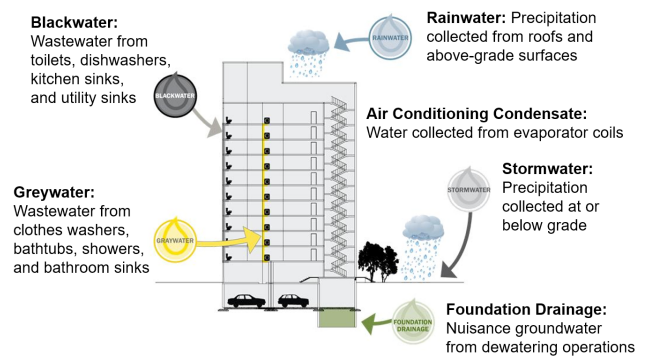
Proposing a mini water treatment plant in every home is a bit excessive. We don't colonize Mars in one swoop. However, if we incrementally improve water sustainability with each project, after a decade, we may design rooftop gardens to serve two purposes: to cool the building and to filter wastewater. Apple pioneered by designing not just a product, but a lifestyle. Perhaps architects can design not just sustainable buildings, but shape sustainable living, transcending our sustainable design of a building into the sustainable life of its occupants.



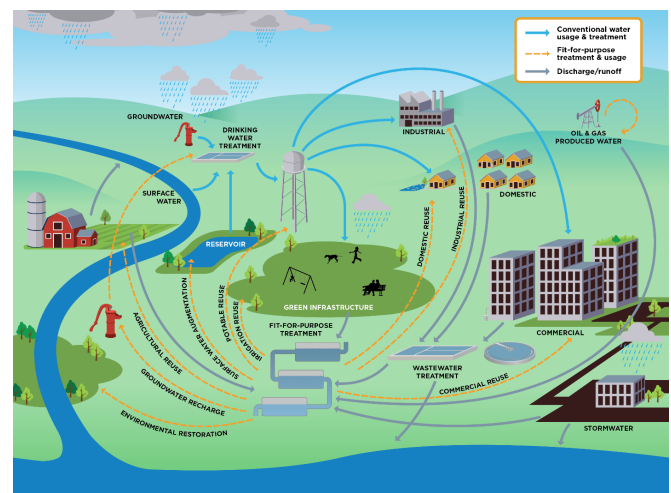
Above: Image Credit – Stephen L Ball Architect Inc. Gray water reuse for landscape irrigation. (close up).



Above: Image Credit – Stephen L Ball Architect Inc.



Above: Image Credit – EPA On-site non-potable water reuse research.



Above: EPA Basic about water reuse. Image Credit: –Stephen L Ball Architect



Charles Ou-Yang, Assoc. AIA, PMP

Ou-Yang is an emerging professional with AIA Orange County at Ball Architecture. He is adept at assimilating ideas while demonstrating a logical approach to solving complex problems.

How to be a climate action advocate as a young architect

As an architect, you have probably been made aware of the urgency of climate action, but perhaps its connection to the practice of architecture is less clear. I want to express the significant value you as an architect can bring to climate action advocacy and where to start your journey.

As greenhouse gases, notably carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons, are emitted into our atmosphere by our transportation systems, industrial and manufacturing facilities, agriculture practices, and buildings, they are destabilizing our climate and causing natural disasters such as the West Coast forest fires of last summer and possibly the February snowstorms in Texas. Scientists at the Intergovernmental Panel on Climate Change (IPCC) have tied climate change to a key figure: temperature rise in degrees Celsius compared with pre-industrial levels from 1850 to 1900. Because of greenhouse gases previously emitted and currently being emitted, we are expected to reach a 1.5°C temperature rise between 2030 and 2050. Today, we are at a rise of 0.5°C, and it has been determined that a global temperature rise of 1.5°C temperature is inevitable. This 1.5°C temperature rise will put our natural and human systems at risk of even further instability and collapse, but not nearly as much as if we were to reach a rise of 2°C.¹ This is why it is imperative to advocate for all sectors of industry and regulation to take climate action seriously so that we do not exceed 1.5°C.

The Architecture 2030 Challenge states that buildings generate nearly 40 percent of annual global greenhouse gas emissions..

global greenhouse gas emissions.² These emissions come from a building's operational carbon and its embodied carbon. Operational carbon represents the energy consumed to power and operate a building; embodied carbon represents the energy needed to produce the building's construction materials. This

While the above statistics sound daunting, my hope in writing this is to inspire you. The Architecture 2030 Challenge states that buildings generate nearly 40 percent of annual

means architects and the profession of architecture have an important place in the climate action advocacy effort. Through our holistic thinking and innovative problem-solving, we can drastically reduce one of the largest pieces of the emissions pie. In this article, I will share resources and organizations you may seek out to further establish yourself as a climate action advocate within your projects, firms, communities, and the global environment.

Increase Your Climate Vocabulary and Awareness

The IPCC is the United Nations body for assessing the science related to climate change. It has published a significant number of reports and graphics on climate change, and they are all free for download. Each report often begins with a summary that lays out its findings in accessible language. The 2014 Mitigation of Climate Change Report has a chapter dedicated to findings on buildings, including trends and drivers of their energy consumption.³

Join a Community to Learn From and With

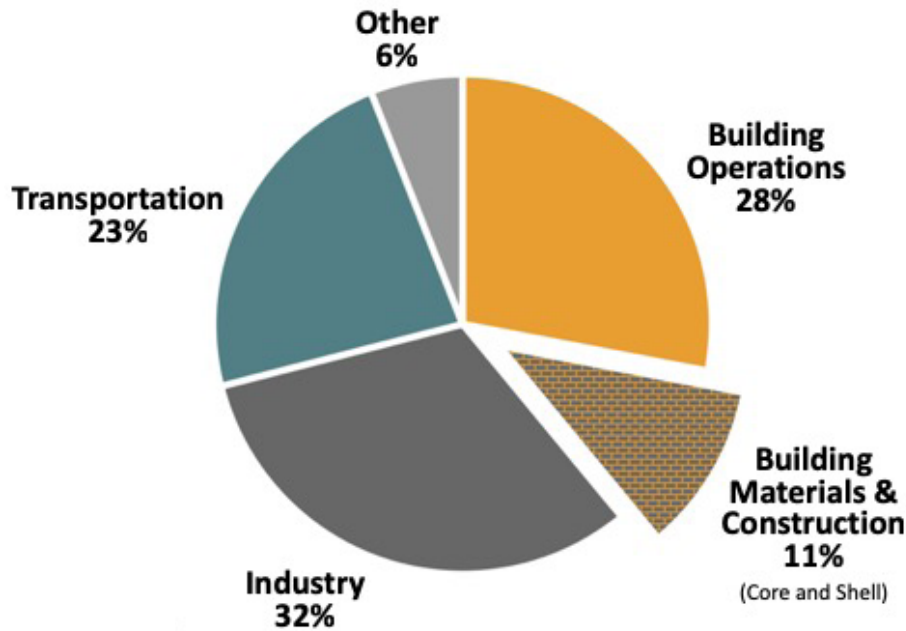
I have found my best advocacy efforts have come from collaborating with and learning from others. There are many wonderful sustainability-oriented organizations to choose from, but one I have found particularly valuable is the Carbon Leadership Forum. The mission of the CLF is to decarbonize the built environment. It produces reports, shares resources, and produces climate action policy tools. It is primarily an online community, but there are hubs in cities all over the country and probably near you.⁴

Many local AIA components have a Committee on the Environment (COTE), which can be an excellent way to get involved in climate action programming in your city and become better connected with other architects passionate about climate action.

Get to Know the AIA Framework for Design Excellence

The National AIA COTE has curated several sustainability resources⁵, including the Framework for Design Excellence. This framework "seeks to inform progress toward a zero-carbon, equitable, resilient, and healthy built environment."⁶ My firm compares its projects against the framework to find the

Global CO₂ Emissions by Sector



Global Alliance for Buildings and Construction. 2018 GLOBAL STATUS REPORT

natural sustainability synergies already built into the design and where there is room to dive deeper. I recommend spending time with it and seeing how it might enhance your projects and be an asset to your firm.

Seek Out Opportunities to Influence Local Building Codes

There are several ways to become involved in your jurisdiction's code and policy writing. There are code committees and often code change cycles, and there are calls for feedback from architects and engineers. Opportunities will of course vary depending on your location, but I have found that once you express interest and join relevant mailing lists, the chances for involvement are numerous, and you do not need to be an expert to be helpful.

Connect With Your Legislators

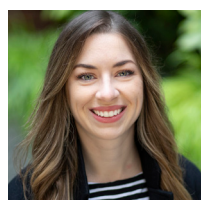
Many AIA components facilitate efforts to lobby your state legislators about proposed bills that are in alignment with the AIA's mission and values, which include climate action.⁷ In my experience, my AIA component provided highlights of the bills we were focusing on and talking points for me to use in conversation with my representatives. Lobbying is much simpler than it seems from the outside. It is more about building connections and demonstrating that architects can be a knowledgeable and supportive professional group on climate issues.

Don't Forget About the Intersectionality of Environmental Justice

Climate change is a humanitarian crisis as well as an environmental one. The EPA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income concerning the development, implementation, and enforcement of environmental laws, regulations, and policies. This is paramount to remember when advocating for climate action. The best solutions will serve all members of society equally.

FOOTNOTES

- 1- ["Why the Building Sector?," Architecture 2030.](#)
- 2- ["Global Warming of 1.5 C," IPCC.](#)
- 3- ["AR5 Climate Change 2014: Mitigation of Climate Change. Chapter 9: Buildings," IPCC.](#)
- 4- [Carbon Leadership Forum.](#)
- 5- [AIA Sustainability Resources.](#)
- 6- [AIA Framework for Design Excellence.](#)
- 7- [AIA Climate Action Plan.](#)
- 8- ["Learn about Environmental Justice," EPA.](#)



Brittany Porter, AIA, CPHC, LEED Green Associate

Porter is an associate and project architect at Weber Thompson working on high-performance workplace projects in Seattle. Porter has a background in passive house design and is passionate about low-carbon architecture that promotes health and wellness for all.

Cultural knowledge

The forgotten pillar of sustainable practice



Above: A low oblique view from above the Hopi village of Oraibi, showing terraced houses, Arizona, 1898. Public domain image provided by Wikimedia Commons/George Wharton James/University of Southern California

Cultural knowledge is the forgotten pillar of sustainable practice. It is a pillar that ancestral humans were intimately aligned with, but through the years, the culturally rooted relationship with nature became much less sustainably focused. Because we are generations removed from the cultural knowledge embedded with natural sustainable practices, today's architectural professionals may think about sustainability in the form of rating systems or "green" design. Ideally, as a society, we never should have separated our knowledge from and relationship to nature in the first place. The way to regain that knowledge is to holistically understand how to overlap and implement the building knowledge of ancient cultures and the ever-advancing technologies of the future.

Traditionally, culture is composed of five main subsets: behaviors, values, norms, rituals, and artifacts. As an architectural professional, we can immediately acknowledge our hand in historically creating "artifacts," but ancient architects played an even greater role in all aspects of culture. In general, architectural knowledge was more widely accessible than it is today because of a slightly differing necessity on shelter. Shelter was still a necessity as it is today, but our ancestors had to build their houses, not buy them, therefore relying on the passing down of architectural, sustainable

building knowledge from one generation to another. The need for shelter drove different cultures to use culturally acceptable sustainable principles like gathering locally sourced resources. There also was a deep-rooted understanding that if all the resources to sustain life were to be exhausted, the environment would be changed to the point where that civilization would need to find another home. For sedentary cultures, this migration would cause cataclysmic results for various civilizations because the cultural knowledge of utilizing the known land and resources was not ancestrally understood in the new environment. Today, the principles behind using site-specific sustainable design knowledge and historical cultural knowledge remain just as important and act as a reminder of why we need to strive for sustainable solutions.

Throughout history, it has been noted that architecture is composed of significant examples of site-specific vernaculars. In many cases, their architecture was a physical embodiment of their values, beliefs, and ideologies. Depending on the culture and on the meaning behind the architecture — religious, political, power, or shelter — many ecological footprints have been placed on this earth for architects to learn from. The difficulty with learning about sustainable design from the past is that there may not be an ecological footprint. In many cases, archaeologists rely on verbal or speculative knowledge, which is then what architects must rely on, as well, but there are still excellent examples of ancient architecture that applied sustainable and cultural principles.

One of the best examples of cultural knowledge as sustainable practice is in Arizona, in the Hopi village of Oraibi. Founded between 900 and 1100 AD, before the well-known historical site of Angkor Wat in Cambodia was constructed, Oraibi is estimated to be the oldest continuously inhabited community in the United States. Obviously, at the creation of the village or any other historical town, modern comforts such as air-conditioning or electricity were yet to be invented, but because of cultural norms and knowledge passed down throughout generations, the Hopi were able to maintain comfortability for many generations. Their homes were constructed of mud and stone. They were clustered together and at times stacked on top of one another. Today, Oraibi's architectural vernacular is

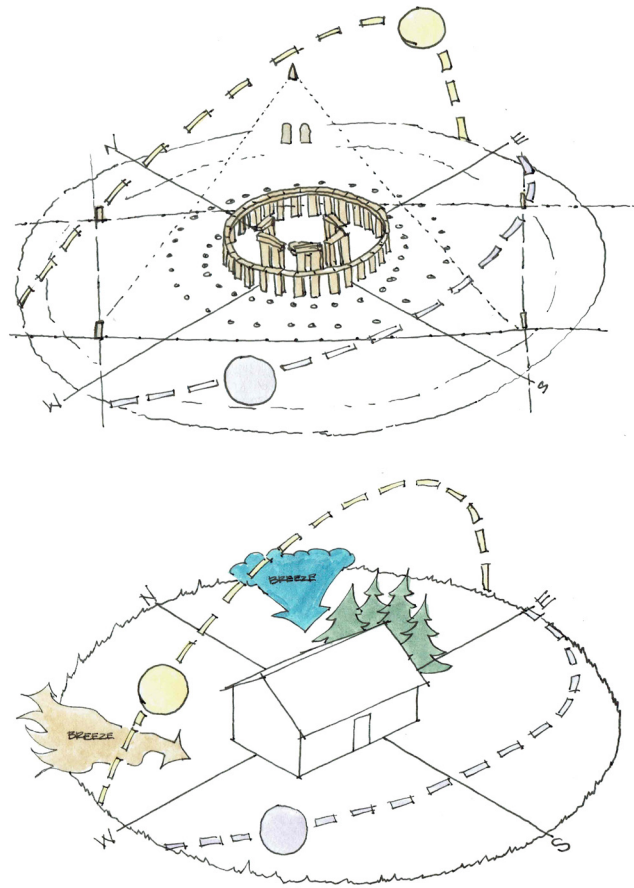
blended with old stone homes and modern cinder block homes, but the Hopi traditionalists of Oraibi have changed their way of life very little since the creation of the village.

Regardless of historical or current sustainability thought processes, there are overarching patterns of air, light, water, and acoustics throughout old and new sustainably meaningful architecture. These four strategies are fundamentally linked to culture, as well, and can be seen in archaeoastronomy and archaeoacoustics. Archaeoastronomy is how ancient cultures used the sun, moon, stars, and planets to influence architecture and design, and archaeoacoustics are how ancient cultures manipulated sound design in a built environment so that sound played a momentous part in rituals and safety. Because of its worldwide popularity, Stonehenge is a great example to better understand archaeoastronomy and archaeoacoustics.

Stonehenge is laid out in a concentric circular pattern with an overlapping rectangle of four station stones. Using archaeoastronomy, archaeologists have been able to conclude a relationship to the layout of Stonehenge with alignments of equinoxes and lunar cycles. These are historically important in this environment because it could have told this ancient culture when to do farming tasks, or it could have marked sacred rituals. While today we may not be as sensitive to the minute changes of the Earth, sun, and moon cycles as our ancestors were, the cultural knowledge from archaeoastronomy can be applied to modern-day sustainability uses. An example taken from ancient architecture may include orienting a building according to sun angles, for winter and summer equinoxes, so that throughout the year, low energy consumption and comfort levels are maintained via passive heating and cooling. This coupled with cultural knowledge of the site's winds could result in an even better-performing sustainable solution.

Due to archaeoacoustics, scientists have been able to speculate that Stonehenge has an acoustical reverberation time similar to a lecture hall where strong speech intelligibility is required. These studies matter because in ruins where the purpose is less known, the functions of the historical built environment can be better hypothesized. Today, acoustics play an important function regarding comfortability in general architectural design, and acoustical principles can be implemented in passive, sustainable ways. An example would be having a home off a road and using a tree barrier. This tree barrier is not only aesthetically pleasing, provides wildlife a home, and may meet other sustainable solutions like comfort via wind control, but also site-specific selected trees provide an acoustical barrier to unhealthy vehicular noises.

As architectural professionals, we have never been at a greater time to utilize past and present cultural knowledge to sustainably advance the field of architecture. Society will not change until there is a shift in our throw-away culture. Much like how cultures shifted throughout the years, it



Above: Stonehenge cultural knowledge principles vs. modern-day dwelling sustainability principles. Image sketched by Kelsey Jordan

will take another shift to neutralize negative environmental effects and another shift to collectively affect the environment positively. Architecture must embrace cultural characteristics in conjunction with the environment to fully commit to a more holistic sustainable practice. Edward T. Hall, an American anthropologist and cross-cultural researcher, was quoted as saying: "Culture is like an iceberg. Some aspects, like behaviors, rituals and artifacts, are easy to see. Others, like values and norms, are trickier to spot. Being cognizant of all these characteristics — both above and below the surface — is essential in shaping a culture that aids, rather than obstructs." We are architects. We have the skills to aid and not obstruct.



Kelsey Jordan, Assoc. AIA, WELL AP

Jordan is an architectural project lead at Ittner Architects in St. Louis. As chair of the AIA STL WiA Community Outreach Committee, she empowers young women through design. She is also a founding member of the AIA STL EDI Committee.

How to implement small sustainable changes at your office that can make a big difference



Blair Begnaud, Assoc. AIA, LEED GA, is a designer and the sustainability point person at Modus Studio in Fayetteville, Arkansas. While getting her master's degree at the University of Louisiana at Lafayette, Begnaud participated in ecological master planning projects that won internationally in the Vertech Greener Cities Competition, and another team project won nationally in the EPA Rainworks Master Planning Competition. She is passionate about creating a greener natural and built environment for future generations.

KL: Tell us what got you interested in the field of sustainability. What makes you passionate about it?

BB: I first started to understand sustainability went much deeper than solar panels and rain gardens around my third year of architecture school. I went into my fourth year taking electives that focused on sustainability and shifted my studio projects around the idea of designing a green and healthy environment. That same year, I managed to get a design patent for a portable mothers' room while in my sustainability elective course. My interest in this topic landed me a position as the research assistant in the Office of Sustainability at the University of Lafayette while I was working on getting my master's. My passion for sustainability grew tenfold under the direction of Gretchen Vanicor, the director of sustainability, who was an incredible mentor who built the Office of Sustainability at the university from the ground up. That position got me fired up to enter the architecture world to try and shift the way we design and build.

KL: When you first joined Modus Studio, they already were pursuing and creating sustainable projects. In what ways have you made this more accessible and furthered their sustainability track?

BB: When I joined Modus Studio, I was given the freedom to develop some things to push Modus Studio in a greener direction, which eventually evolved into the start of the Sustainability Tracker. The Sustainability Tracker is the office's reference guide to:

- Office sustainability goals
- Green/LEED-approved materials
- Red-listed materials
- Solar balancing calculator
- Simplified green energy codes that list requirements for the various states in which we have projects
- Local contacts to sustainability resources and consultants
- Green design checklist
- Post-occupancy evaluation program

The whole point of the Sustainability Tracker is to make things simplified and make resources more accessible for employees to understand. Additionally, in our weekly office meetings, we have time blocked off for sustainability topics where I can inform the office on sustainability news and updates and get more information from others in the office about materials, systems, products, or other various sustainability updates they have discovered that week.

KL: If someone would like to get their firm more involved in sustainability, what advice do you have for them?

BB: The best advice I can give someone who is interested in getting involved in sustainability would be to talk to others at your firm. Odds are, you are not the only one interested. Many firms have developed committees for sustainability and other important topics. You can also be that person in the office who can outline what sustainability is, why it's important, and start the conversation with your bosses and coworkers about what they can do to push their office in a sustainable direction.

KL: If someone can't get their firm onboard to include additive sustainable practices in their projects, what are ways an employee can still implement small changes?

BB: If you want to make a change, start with yourself! You can push your education to the next level by getting certified in a green program or joining a work group. It's never been easier to join a group of like-minded individuals over Zoom. The internet is a fantastic place where you can educate yourself and find premade lists of red-listed materials, sustainable design best practices, and information on proper building and solar orientations. There are so many small steps that we can take as designers. When you're designing, try adding bike racks as a way to promote more biking to the building than driving, specify non-VOC paints, throw in a low-cost rain garden, and select materials and projects that are locally and sustainably sourced.

KL: There are a lot of great certification programs out there like LEED and the Living Building Challenge, but sometimes the requirements are more expensive/difficult, and either a firm or a client may decide not to pursue. What are some other programs individuals or firms could try and target that may not be so extensive?

BB: There are plenty of green certifications out there that you can pursue for projects besides the various LEED certifications and Living Building Challenge, like Energy Star, BREEAM, Green Globes, National Green Building Standard, Greenguard, and WELL Building Standard. (Those are just a few.) It's important to do your research and determine what is right for your project. Additionally, the sooner you decide to pursue a certification in a project's design phase, the better.

KL: There are already programs and initiatives out there, like Architects Declare and the AIA 2030 Commitment. What are the benefits for your firm to be aware and take part in these? Is there a way as an individual you can be a part of this if your firm is not a signatory?

BB: By committing to these programs, your firm can elevate your practice, save clients money, and combat the effects of global climate change. Typically, all are welcome to join these groups to be involved with working groups and participate in or plan actions, regardless of whether or not your firm is a signatory.

KL: Architects aren't the only professionals that can make small changes to a project to make a big difference. What are some things we can work with our consultants and contractors with to make these changes?

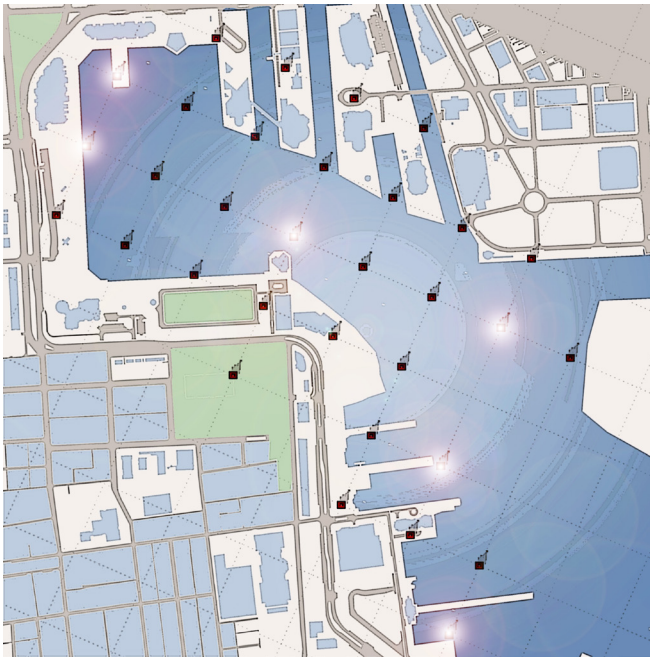
BB: Correct! Many contractors and consultants also want greener buildings and environments. There are so many ways all of us together can implement better systems, locally sourced materials, and smarter products in our projects. For example, engineers can specify low-flow fixtures, add smart thermostats, and occupancy sensors for lighting. Landscape architects can specify native plantings by using trees, plants, and grasses that are native to the area, significantly reducing irrigation needs. Landscaping can also be used as part of a passive energy strategy. Planting trees that shade the roof and glazing during the hottest time of the day, the solar heat gain can be reduced. By implementing stormwater management strategies, such as pervious pavers, retention ponds, or other elements of low-impact development that help to reduce runoff, the negative environmental impact of buildings can be scaled down. Contractors can utilize programs that will take and recycle construction waste materials, reduce water and energy used on site during construction, and develop an air-quality plan for both indoor and outdoor activities. These are just a few things we can do, but just the smallest change in our thinking and how we design can make a major impact.



Kiara Luers, AIA

Luers is an associate and director of emerging professionals at Modus Studio in Fayetteville, Arkansas. She is on the board for AIA Arkansas as the assistant associate director of emerging professionals and is the Young Architects Regional Director for Gulf States.

Project spotlight: The Knolly Project



Above: Knolly site plan

In 2019, T3XTURE, an annual international publication for architects, designers and artists, collaborated with AIA Baltimore and the Baltimore Architectural Foundation (BAF) Spring Lecture Series to promote innovative thinking about the water's edge, specifically addressing the Baltimore waterfront via a competition that promotes sustainable design and architecture along the water's edge. The 2015 Baltimore Waterfront Partnership's Healthy Harbor Initiative goal of a swimmable and fishable inner harbor by the year 2020 served as a premise for the 2019 AIA Baltimore and BAF Spring Lecture Series design competition.

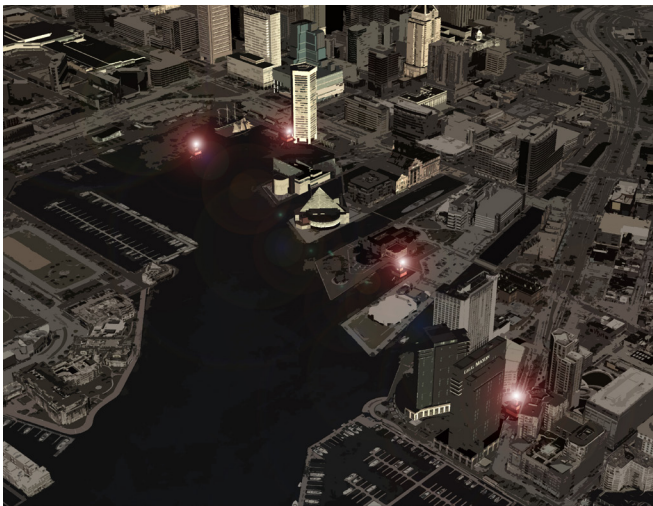
The submission entry illustrated in this article is by local architect Kenneth Michel, AIA, NCARB, of APECx, LLC. APECx is an MBE-certified architecture firm in Granite, Maryland, with a focus on sustainable architecture and design.

Multi-disciplinary teams of architects, planners, and landscape architects were challenged to address waterfront issues concerning sustainability, resiliency, health, ecology, and questions about the future of Baltimore's Inner Harbor. The following goals served as driver's for the 2019 AIA Baltimore and BAF Spring Lecture Series design competition:

"The Knollies Project is whimsical and certainly adds a flair of fun. The concept speaks to the swimmable and fishable harbor & acknowledges the history of lighthouses to the harbor and bay." — Jury Comments



Above: Harbor skyline



Above: Aerial view of Inner Harbor

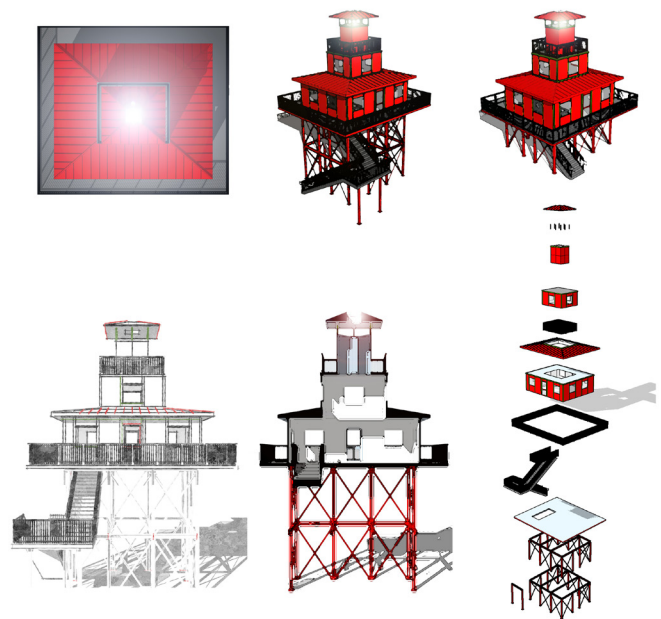
- A swimmable and fishable harbor edge
- The connection between the city and harbor
- Spatial equity and an accessible harbor
- Community engagement and sustainable education
- Public engagement and the natural environment

Project Description:

The Knolly project aims to reimagine Baltimore's Inner Harbor by redefining the historic Seven Foot Knoll Lighthouse along the water's edge. The scheme is based on a point grid system that visually and intangibly connects the city and the harbor by extending the city's streets through the water's edge. The grid provides a layout for the distribution of "Knollies" at 400-foot intervals.

The project enhances the connection between the city and the harbor by engaging city residents and visitors via a grid system of modules or "Knollies" that are both reflective of Baltimore's history and are native to the environment. The grid's intersections set up the scene for "event" architecture that houses activities such as concerts, art exhibitions, bathing, fishing, swimming, playing, dining, living, selling, and working. The grid provides inclusion and accessibility to "event" architecture via the spatial equity of goods and services. The Knollies are proposed to be self-sustainable, of modular

construction, and will have three main sections: A gallery deck for the selling of goods and services and housing living quarters, public access points for fishing and swimming, and a third section that serves as a tank for rainwater harvesting and light beacon. Each Knolly will educate the community on harbor cleanup and pollution prevention. The Knollies are an architectural representation of Baltimore's past and give organization to the new and displaced urban park, engaging people to navigate along the water's edge and throughout the city. Learn more at www.APECx.com/the-knolly-project.



Above: The Knolly



Kenneth D. Michel, AIA, NCARB

Kenneth is the founder and principal architect at APECx, LLC and has expertise in sustainable design and construction and is an active contributor to the AEC community.

Sustainability for people

An interview with Eric Corey Freed



On February 5th, architect and Connection contributor Chris Fagan spoke with Eric Corey Freed, a renowned expert in sustainable design who is making a powerful impact on our future built environment. Their conversation ranged from advising design firms to Frank Lloyd Wright and standup comedy.

Eric Corey Freed is an award-winning architect, author, and global speaker. As Senior Vice President of Sustainability for CannonDesign, he leads the healthcare, education, and commercial teams toward better and higher performing buildings for over 15 million square feet a year. For two decades, he was the founding principal of organicARCHITECT, a visionary design leader in biophilic and regenerative design.

Eric is the author of 12 books, including “Green Building & Remodeling for Dummies.” In 2012, he was named one of the “25 Best Green Architecture Firms” in the US, and one of the “Top 10 Most Influential Green Architects.” In 2017, he was named one of Build’s American Architecture Top 25. He holds a prestigious LEED Fellow award from the US Green Building Council.

CF: Eric, thanks for taking the time to speak with me! Can you please introduce yourself?

ECF: My name is Eric Corey Freed, I’m an architect and director of sustainable design at Cannon Design, and I live in beautiful Portland, Oregon.

CF: Can you describe your role at Cannon Design? What does your role look like on a typical day?

ECF: What is a firm but people? I’ve been friends with the Cannon Design team for years and was looking for a way to have a greater impact.

I had owned a firm for 20 years, it was fun but...small. I have this one life and career to give; how can I do as much good as possible? There are plenty of problems in the world, but I choose to deal with this big one called climate.

Cannon approached me looking for someone to facilitate this new role. And I had some requirements. Sustainability has to report directly to the CEO and core team. Not marketing. I want the freedom to make bold suggestions about where we as a firm need to go. I get to be involved in every project team at the firm, 20 million square feet built each year across North America and the world. I often brag that I have the best job at the firm!

Today, I did a sustainability workshop for a team designing a new children’s hospital. I’m selling them on the benefits that sustainability brings, including health and stress reduction. We focus on these desirable outcomes and find sustainable ways to get there.

At Cannon, I found a ton of enthusiasm, but also a ton of reluctance to bring up sustainability ideas because they didn’t feel they were experts. Have you heard of “3 questions deep”?

CF: Please elaborate.

ECF: Most of us can answer one question about any topic. If you read an article, you might nail a follow-up question. But the 2nd follow-up reveals who has firsthand knowledge of a subject. I’m training our teams to be “3 questions deep” on embodied carbon, mass timber, net-zero energy, Passivhaus, and so on, if only to instill the confidence in them to speak up. I’m trying to change the culture of the entire firm.

CF: What phases of each project are you usually engaged in, or is it a holistic involvement?

ECF: I join the upfront phase, writing proposals, doing the kickoff, then handing off development to the experts. I want to bake these outcomes in at the start! You can’t take a drawing set through CDs and tack on sustainability; I make sure it’s integral to the design so it can’t be value-engineered out. I’m also in many ways the voice of reason. In

the design of a cancer hospital, I might ask “Shouldn’t we avoid using cancer-causing materials in this hospital?” And everyone says “Yeah, great idea!”

I feel that a large part of my job is thinking like I’m six years old, and asking the adults these annoying important questions.



Above: Before declaring something to be impossible, we must always question our biases and assumptions. (Image owned by Eric Corey Freed.)

CF: You’ve led me to another question: How do we incentivize sustainability? How do we make the business case and appeal to our clients and stakeholders?

ECF: What you’re describing is the challenge of our age, how to get people interested in this. Everything I offer makes the building better. A green roof may cost more up-front, but it will change the building’s energy cost profile. It will pay for itself as an amenity to the occupants, and indirectly through the carbon, it offsets. My job is to convince the client to wait longer for that return on investment.

CF: Cannon Design is a global firm. How do these strategies look different in varying climate, cultural, and political contexts?

ECF: One of my secret powers is that I’m a glorified marriage counselor. This came from 20 years of doing residential work. Also, for fun, I do standup comedy. You quickly learn how to read a room. As an outside expert, I’m only there to make the building better and have no other agenda. I’m representing humanity more than anything by asking those six-year-old questions, getting everyone to the same page, and galvanizing their vision.

CF: You make a powerful case by focusing sustainability on people. That’s so important to get the people who actually have control over the planet and development to come along with this mission.

ECF: Something that greatly changed my thinking as an architect happened recently. I was speaking with my friends

at the XPrize Institute. Founder Peter Diamandis engages in “abundance thinking”, which is a fundamental shift in thinking that transformed how I approach clients. I spent many years becoming great at addressing their fear. I don’t do that anymore! I want to get them excited about a bigger vision. I also have the technical background to explain how to do it. You have to balance the aspiration with the details.

CF: What a refreshing perspective. What’s a current project of yours that you’re really excited about?

ECF: Using this outcomes-based approach to sustainability firmwide, we’ve done a few things. Internally, our board approved a commitment to target net-zero energy for every new project we do. Externally, we have a dozen projects right now where our clients have the healthiest or greenest building on campus. I speak with their stakeholders – ownership, administration, occupants, or facility staff – to understand how these strategies are important to them.

CF: Let’s talk about you. You named your website Organic Architecture. What does that mean to you?

ECF: That evolves daily, and probably will for my lifetime. “Organic architecture” is in deference to Frank Lloyd Wright. I studied under his students, former Taliesin apprentices, and they’re an interesting bunch. They all have that look like someone who has seen God – a certain calm about them. A sense of abundance. I’ve kept that spirit with me to this day, to trust that the universe will provide.

He was a genius who had a transformative impact on architecture. I was lucky enough to discover this when I was 10 years old. I grew up in Philadelphia, and his only building there is Beth Shalom Synagogue (completed after his death). I was there for a service, and I was transfixed. It’s very empowering to discover your mission early on.

Organic Architecture is understanding the way nature builds. What does the site want to have here? We have to ask simple questions about how nature wants the building to behave.

CF: You’ve spoken about buildings in isolation. What would an Organic Architecture city look like?

ECF: We wouldn’t design everything around cars! The car lobby got us to redesign the entire world around their products. We should design communities around children first. What is a safe, vibrant place for children? The scale of our built environment should be human-focused.

We can’t make a city from scratch. How do we transform our existing cities to be more sustainable? It starts by understanding and challenging our initial assumptions, the standards, and the perspectives driving our design.

CF: How do you engage municipal governments with a sustainability plan?

ECF: You can't start by trying to green all of St. Louis. But if you say to the head of sustainability at St. Louis, we want to green this one district and use it as a proving ground to address some of your larger issues, they are more than happy for your help. With Ecodistricts I saw this approach succeed time and time again, and I encourage you to check out what they do.

CF: This reminds me of a Dutch town that transformed itself into a "circular economy", which Amsterdam is now using to create its own plan. Can you discuss what a circular economy means?

ECF: The circular economy is changing our 300-year old "take-make-waste" approach. If we bend that linear approach, we can approach the reuse of everything we produce. A cradle to cradle process. When you live in a place like the Netherlands where dams have been holding back the water for ages, you learn to take the longer view. They measure their economy in terms of how "circular" it is. I'm writing a book about circular economies now, hoping to popularize this thinking in the US.

CF: Besides the Netherlands, what other countries do you see as taking leadership in sustainability?

ECF: Cuba is a great example; it is both literally and figuratively an island. Cuba has the most incredible reuse program thanks, in part, to our embargos on them. They have an advanced organic farming program. Because of their isolation, they are ahead of the curve in understanding the urgency of sustainability.

In the last decade, we had more billion-dollar disasters than ever in history. My fear is that we'll become numb to it – we must not normalize this. I can't express how utterly not-normal this is! The message in my talks now is, wake up!

CF: Yes, but with a positive frame as well...we should wake up to the possibilities of a sustainable world.

ECF: That's why I use humor; it opens up our brains and it's a great delivery mechanism for the message. Plus, frankly, it makes this deadly serious work more fun.

CF: What action can young designers take right now to help make a difference?

ECF: Number one, choose healthy, sustainable materials for your office library and let your team and clients get familiar with them. Number two, bring these climate-smart alternatives up to every client. In 2019's AIA conference, we as a membership body voted that "architects have a moral and ethical obligation to provide climate-smart solutions to our clients". 93% of us said yes! Number three, set a simple and achievable goal for yourself or your firm. Number four, start baking these strategies into your proposals. Number five, sign on to the 2030 Commitment, at architecture2030.org.

CF: For an emerging architect looking to make their first step, what organization would you suggest as a good place to start?

ECF: The one that always excites me is Living Building Challenge. It sets a very clear bar for our profession. Consider becoming a Living Future Ambassador. I'm a LEED Fellow, but LEED alone can't solve every issue. WELL is beautifully and elegantly designed.

CF: Thank you for sharing your time and wisdom with our readers! How can we connect with your work?

ECF: My website is organicarchitect.com, and I have a few TED talks on YouTube. Check out "Nature Becomes Architect". Thank you for having me!



Above: Freed addressing an audience at the XPrize Institute. (Image owned by Eric Corey Freed.)



Christopher Fagan, AIA

Fagan is Owner and Principal Architect at Christopher Fagan Studio Architecture, PLLC. He is also chair of AIA Queens chapter's emerging professional's committee, and young architect regional director of New York state.

Connection and chill

Cocktails and streaming content for the casual consumer

Each quarter, the YAF Knowledge Focus Group curates streaming video content and a cocktail concoction to salute each Connection issue theme. In Q1, our curations are inspired by climate action and sustainability.

Cocktail Recipe: “When Life Gives You Lemons”

Do you discard lemon peel? How about plastic container lids or even the liquid from chickpea cans? This recipe reclaims items that are typically tossed to create a sustainable version of a limoncello fizz.

Ingredients

Limoncello
 Three lemons (local/organic preferred)
 1.25 cups vodka or non-alcoholic substitute (locally made preferred)
 1 cup sugar (local or organic)
 1.25 cups water
 2 tbsp aquafaba (excess liquid from canned chickpeas, aka vegan egg whites)
 2 oz club soda or 7-Up
 The leftover plastic container lid
 Bitters (pour into reused, sanitized spray bottle)

Instructions

Limoncello: Peel lemons using a vegetable peeler, removing only the outer yellow layer. Place peel in an airtight jar with vodka and let infuse for 4 days minimum. Strain vodka. Prepare a simple syrup by boiling together sugar and water until sugar dissolves. Combine cooled syrup into infused vodka to create limoncello and store in the fridge.

Create a stencil with the plastic lid by cutting out shapes, letters, etc.

In a shaker, combine 2 tbsp aquafaba with ice and shake vigorously until foamy. In a shallow glass, stir 2 oz limoncello with 1 oz lemon juice and top with 2 oz club soda. Top with aquafaba foam so that it fills up to the glass rim. Immediately place the stencil onto the rim and spray bitters in stencil void. Remove stencil and celebrate your creative concoction.

Cheers!



Aquafaba from chickpea can



Lemon peel into limoncello and bitters in spray bottle



Mixed drink w/foam top and stencil ready for bitters



Completed cocktail. Enjoy!

Streaming Recommendations (available on Netflix):

In the spirit of climate action, we hope these shows inspire an appreciation for our planet, reduction of waste in your daily life, and overall happiness.

David Attenborough: A Life On Our Planet (2020)

Kiss the Ground (2020)

Public Trust (2020)

Minimalism: A Documentary About the Important Things (2015)

Tiny House Nation (2014–2017)

Allie Ditzel, AIA; Ashley Hartshorn, AIA, NCARB; Kiara Luers, AIA; Caitlin Osepchuk, AIA; Jason Takeuchi, AIA, NCARB, NOMA

The YAF Knowledge Focus Group is dedicated to identifying important issues of recently licensed architects and the creation of knowledge resources to enable young architects to advance their careers.

Young Architects F orum

an **AIA** member group



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Institute
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