Connection

The architecture and design journal of the Young Architects Forum

2020
Q1
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Issue 01

This issue:
Climate action

Emerging professionals are poised to lead the profession's response to climate change with urgency. This issue shares a diverse group of voices that are driving programs, research, and achievement with positive environmental impact.

Young Architects Forum

an **AIA** member group

The American Institute of Architects

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

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

Contents

Cover image: ACCLIMATE, a project by Phil Riazzi and Cameron Foster recognized in the 2018/19 ACSA/AIA COTE Top Ten for Students.

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Editors note:

Leading with optimism

At the Young Architects Forum's annual leadership transition meeting in 2019, the YAF Advisory Committee identified climate action as the most urgent topic to address in the upcoming year's editorial calendar. With the first issue of Connection in 2020, it is encouraging that the response of young architects and design professionals to this issue appears to match the intensity needed to confront the single greatest challenge that faces our cohort. AIA President Jane Frederick challenges our generation to lead the profession's response to the climate crisis (page 6), and we are excited to share a diverse group of emerging voices that are driving programs, research, and achievement on this topic.

To align the start of our year with the AIA's Big Move Toward Environmental Stewardship, Tate Walker provides an introduction to the AIA's Framework for Design Excellence. Formerly known as the AIA COTE Top Ten Measures, the framework initiates a method for designers to optimize their design process to achieve "high performing, equitable, and beautiful buildings." Joyce Raybuck of bnim, the ARCHITECT 50 top ranked firm in sustainability, shares more specific insight into the firm's Sustainability Action Plan. This holistic approach drives firm culture, values, resources, and process and is centered on triple-bottom line metrics. Architects at Payette describe their method for researching, comparing, and selecting materials based on embodied carbon content. Additionally, DLR Group team members share expertise on elevating the human experience by monitoring air quality and selecting healthy materials.

In addition to these firm approaches to climate action, we speak with two Clemson University students that were recognized by the AIA and ACSA's COTE Top Ten for Students program. Robyn Engel encourages a "paradigm shift in the way that we view and do design" through transition design. To close out the topic, Bridget Geissler touches on the shocks and stressors that affect the Midwest, an area without the natural disasters typically associated with climate change.

Architecture is an inherently optimistic profession, and at our core, we are holistic problem solvers. Although daunting tasks, de-carbonization and anthropogenic climate change are solvable problems. The environmental movement that grew in the 1960s and 1970s has achieved demonstrable amounts of progress toward clean air and water, reduced emissions, and increased conservation and has solved problems once thought to be impossible. Because of this progress and the incredible minds and technology that have brought us this far, I remain optimistic and encourage all design professionals to have a similar outlook. However, this optimism is neither content nor complacent. Instead it is hopeful that our profession will continue to research and learn together, advocate for smarter policy together, and innovate together. The YAF communications committee hopes this issue will inspire you to be lead with optimism, urgency and rigor for climate action.

Editorial committee call

Q2 2020:
Call for submissions on the topic of civic engagement, community based design, and public service.
Connection's editorial comittee 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.

2020 Editorial Committee: Call for volunteers, contributing writers, interviewers and design critics. Connection's editorial comittee 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: johnclarknm@gmail.com

President's message:

Be the voice that drives climate action

"Don't ask what will happen. Be what happens."

Those are the words of historian and activist Rebecca Solnit. She was writing about another activist: Greta Thunberg of Sweden. Greta's not even in college yet, but she was named Time Magazine's person of the year for her success in focusing the world's eyes on climate change.

Of course, she's not the first activist to speak out about the climate crisis. People like Al Gore and Leonardo DiCaprio have leveraged their high profiles and devoted millions of dollars to raise awareness.

So how did a 16-year-old break through in a way so many others haven't?

It wasn't just her sailboat. I'd argue it's her perspective. Her ability not just to focus the world's eyes on climate change, but to direct our eyes through a fresh, future-oriented perspective that she is distinctly capable of claiming. Greta's story is relevant to us for two reasons:

One, the climate crisis is the single most urgent and consequential challenge the architecture profession must tackle.

And two, as the newest generation of architects, you are essential to achieving progress on this and other vital issues. Just as new voices like Greta's have spurred action among the public, you can be the new voices driving achievement in our profession.

I'm proud that the American Institute of Architects is leading on climate action. Since our members overwhelmingly approved a resolution last year making sustainability our top priority, we've been working to turn policy into action.

The first big action for 2020 was focusing the operating plan and budget on our climate initiatives. Staff and volunteers are working together in our advocacy, outreach, and knowledge portfolios to create The Climate Action Plan, which was introduced at Grassroots in February.

We are funding research on the return on investment on carbon reduction in buildings. This will help us tell the story of why our clients should construct net-zero buildings. And speaking of telling the story — we will be running TV and social media ads from March through the November election educating the public about the fact that buildings contribute 40 percent of carbon emissions. Our research shows that a very small slice of the public knows this.

We are developing a 2020 Architect's Platform that will feature climate action. We will share it with all the national candidates and highlight it at both the Democratic National Convention and the Republican National Convention. Because "all politics are local," we are working with the U.S. Conference of Mayors to spread our climate action message.

There's no question we can make an impact, but we need your help.

In 2018, only 252 firms reported data to the 2030 Commitment's Design Data Exchange (DDx). That is 1 percent of the architecture firms in the United States. Many might believe it is too complicated or only for large firms. Not true! Ten percent of the firms reporting have fewer than 10 people and are leading the charge with an average predicted energy use (pEUI) reduction of 60 percent. Some 36 percent of the firms reporting employ over 100 people, with an average pEUI reduction of 46 percent.

I challenge all YAF members, as the newest cohort of architects, to get their firms to participate and report their data in the 2030 Commitment. You can sign up here. The 2030 Commitment is not for the 1 percent, it is for everyone.

Just imagine the more beautiful, resilient, and sustainable future, that we — the biggest design organization in the world — will create when we tackle the biggest design problem in the world. By working together, we can do our part to create a world that is worthy of our children's and grandchildren's dreams.

Jane Frederick, FAIA
Frederick is principal of Beaufort, S.C. based Frederick + Frederick Architects, an award-winning firm specializing in custom residences. Frederick is the 2020 AIA President.

Chair's message:

Start small, think big

Climate-responsive design is an imperative that our generation will be forced to address through every stage of our work efforts. This goes well beyond selecting the most sustainable materials and providing resilient infrastructure for our future generations. Mother Earth is angry at the disruption that we humans have caused, and she is fighting back vigorously. She will win; it is simply a question of how many human beings will be around after the fact to continue inhabiting this fine planet.

Responding to the climate crisis should not be a daunting task for any of us. Some of the brightest minds available have educated us. We have been trained to be problem solvers, and this latest crisis is simply a problem we are forced to address in a timely manner. So let us begin 2020 tackling these challenges head-on. We can do this; it is time to stop making excuses and start taking action. Our next generation depends on our immediate actions.

"Don't feel like you need to have a beautiful green project to make a difference here. Carbon neutrality will require both big and small moves... All these little actions start to make a larger impact on the environment around us."

Don't feel like you need to have a beautiful green project to make a difference here. Carbon neutrality will require both big and small moves. Start with the small tangibles in your life. Can you find an alternative means to commute to work each day that would use less fossil fuel? Maybe even just one day a week to start? Do you really need a bag with your purchase? Can you use a reusable water bottle or glass instead of the plastic bottle? Can you compost? Put solar on your residence? Install a rain barrel? Plant a tree? All these little actions start to make a larger impact on the environment around us. Start small, but think big.

Furthermore, if you are fortunate enough to be working with a smart client who wants to build in a sustainable manner, take this opportunity to go beyond LEED: Challenge yourself, earn a new credential, and make the project as green as you possibly can. Don't fall into the pattern of following the same design decisions you made on the previous project. Many of these once great ideas have already become obsolete. Push yourself to learn new strategies on how best to reduce energy, minimize the environmental impact, and create a more equitable community with your next/current project. No project is too big or too small.

As I begin my term as the 2020 Chair of the AIA Young Architects Forum, I look forward to serving this member group and making a profound impact on our generation. We are faced with an environmental crisis, and the architecture profession is poised to lead humanity out of it. We have the skill set, and we have the technology.

Now, we simply need each of you to lead us forward. I regularly find myself astonished when I see what my peers are working on, and what great work they are capable of. I know we can respond swiftly and appropriately in providing climate-responsive design strategies. Our children's generation depends on it. Can I count on you to join this effort?

Ryan McEnroe, AIA, ASLA, LEED AP
As a licensed architect and landscape architect who grew up on an organic farm, McEnroe has a unique understanding of sustainability practices. An associate at Quinn Evans Architects, he serves as the 2020 YAF Chair.

College of Fellows note:

Facing challenges together with the COF

An Introduction
I am a founding partner of Kliment Halsband Architects, a leading practice based in New York City and Northampton, Mass. Our clients include public and private organizations with ambitious educational, cultural, and civic goals. I have taught design in many schools, and I was the dean of the architecture school at the Pratt Institute. Additionally, I served as the first female president of AIA NY and have had numerous civic roles including design adviser, landmarks commissioner, and board member of various arts groups. All of these "out of the office" activities have provided insight into how architects fit in the larger cultural context and into how we are perceived by the public. While sometimes humbling, these are always rewarding experiences.

In 2018, I organized a successful campaign to amend the AIA Code of Ethics. I traveled to the A'18 Conference on Architecture with a petition signed by 601 members of the College of Fellows stating that "there can be no place in the Institute for people who abuse their stature, power, or influence in a manner that violates recognized standards of decency" and demanding that members not engage in harassment or discrimination. The new Code of Ethics reflects these concerns.

College of Fellows
As the new member of the Executive Committee of the College of Fellows, I will serve as the 2020 liaison to the YAF. Fellows can be a powerful voice for positive change within the profession and in the community, and mentoring YAF members is one of the many ways that can happen. Many components have strong programs bringing the YAF and COF together. Forming connections between COF regional representatives and Young Architect Regional Directors can facilitate the movement of ideas, advice, experience, and innovation. While the new Align Mentorship Program will strive to create personal linkages at a national level, I welcome dialogue on how to strengthen all these ties.

COF and YAF together
Attending the recent YAF annual meeting, I was delighted to see your emphasis on "getting out of the office" as a benefit to you individually and to the profession. The more we can do to understand and participate in the society around us, the better architects we will be.

As I write this, we are all being drawn into two discussions that challenge fundamental beliefs about the role of our profession in profoundly different ways.

The AIA call for climate action demands that all of us rethink our everyday lives, our professional commitments, and our relationships to our clients to assure that what we do and how we design responds to the goal of reduced energy consumption, minimal use of Earth's resources, and equity in distribution of resources. There's been a lot of research, but there's no rule book with all the answers. It is up to us to think creatively and share how what we do relates to these goals.

The possibility of a federal classical style mandate, described in a recent Architectural Record article, threatens our creativity as designers. The AIA opposes "uniform style mandates and the idea of any official architectural style." Rethinking the role of design, the nature and meaning of style, and our role as designers, is yet another challenge we must face together.

I look forward to continuing dialogue and collaboration on these and many more topics.

Frances Halsband, FAIA
Halsband is the founding principal of Kliment Halsband Architects in New York City, which won the AIA Firm Award in 1997. She will serve a two year term as Secretary on the College of Fellows Executive Committee.

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Young Architects Forum advisory committee

Meet the 2020 Young Architects Forum leadership

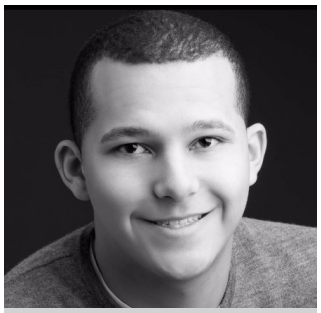
Ryan McEnroe, AIA
Chair

Abi Brown, AIA
Vice Chair

Lora Teagarden, AIA
Past Chair

YAF Executive Committee

Jennie West, AIA
Advocacy Director (2019-20)



John Clark, AIA
Communications Director (2019-20)

Katelyn Chapin, AIA
Community Director (2020-21)

Jessica O'Donnell, AIA
Knowledge Director (2019-20)

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

Frances Halsband, FAIA
College of Fellows Liason (2020)

Laura Lesniewski, AIA
Strategic Council Liason (2019-20)

Above: YAF Advisory Committee and regional leadership at the YAF/NAC joint annual meeting in Austin, Texas in January.

2020 YAF initiatives:

Advocacy Focus Group
Providing a voice for issues facing young architects. Highlighting civic engagement opportunities related to the AIA's Big Move, family leave, and other "uncomfortable issues."

Communications Focus Group
Connecting the voices of emerging professionals through the quarterly publication of Connection. Topics for the year include climate action; civic and community leadership; equity and diversity initiatives in architecture; and practice innovation.

Community Focus Group
Building aupportive relationships between emerging professionals by spotlighting outstanding component level programs, demonstrating how to create a successful local emerging professionals committee, sharing how to faciliate the EP Friendly Firm Award, and providing mentorship tips.

Knowledge Focus Group
Increasing the visibility of YAF through continued collaboration within the AIA and outside the AIA. Leading as information architects and curating A'20 and A'21 sessions related to innovation and the Big Move.

Strategic Vision (Practice Innovation) Focus Group:
Creating explorative opportunities for testing ideas that disrupt the traditional concept of practice, process and thought. Highlighting successful practice innovation programs through toolkits, spotlights, and awards.

Resource guide:

AIA's Center for Emerging Professionals

AIA YAF KnowledgeNet
A resource for discussion, blogs, announcements and events at network.aia.org/yaf

AIA Trust
A free risk management resource for AIA members.

AIA College of Fellows
Check out the College of Fellow's reciprocal newsletter.

Facebook **Twitter**

Instagram **Issuu**

Young Architects Forum regional leadership

Meet the 2020 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.

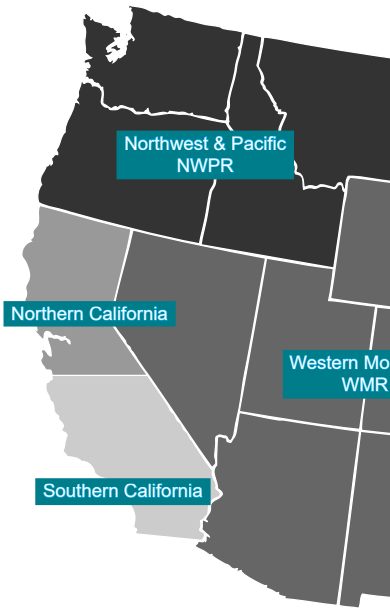
Katie Kangas
North Central

Jason Takeuchi
Northwest & Pacific

Tay Othman
Northern California

Ashley Hartshorn
Western Mountain

Mandy Freeland
Southern California



Jonathon Jackson
Michigan

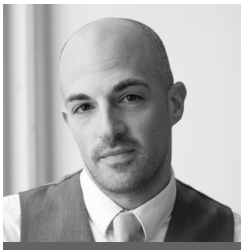
Seth Duke
Ohio Valley

Casey Crossley
New York

Caitlin Osepchuk
New England

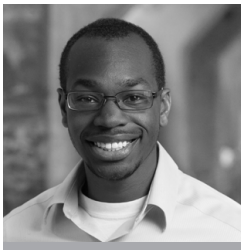
Vin Minkler
New Jersey

Kate Thuesen
Central States



Carl Sergio
Illinois

Monica Blasko
Pennsylvania



Beresford Pratt
Middle Atlantic

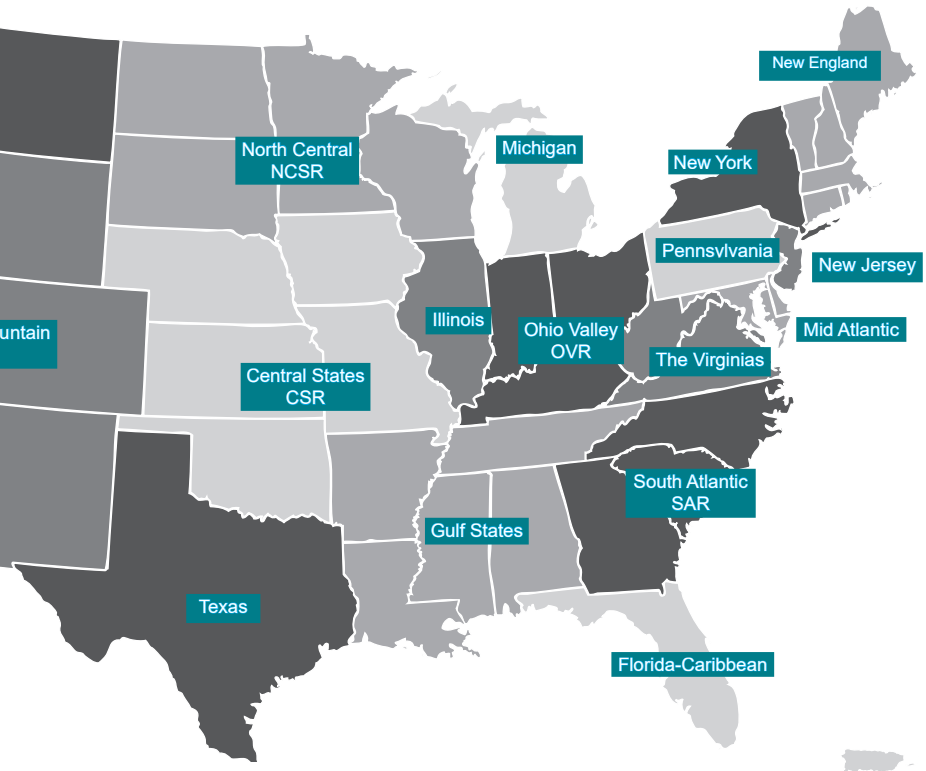
Alli Ditzel
The Virginias

Emily Schickner
South Atlantic

Madison Talley
Gulf States

Clarice Sollog
Florida-Caribbean

Amaya Labrador
Texas



A’20 at a glance
Young Architect edition

Navigate Los Angeles with the YAF

A’20 content listed below has been identified by the Young Architects Forum as having subject matter of particular relevance to those licensed 10 years or less. Session dates, times, and locations are subject to change. Refer to the A’20 conference website for final session information.

We look forward to seeing you at A’20 in Los Angeles!

Day 1

WE106 **4 LU**
8:00 – 12:00pm
Thrive, Survive or Be Extinct: How to Grow Your Practice

AIA Event
5:00 - 6:30
A’20 First Timer Buddies Meetup

YAF developed

YAF recommended

Day 2

TH102 **3 LU**
8:00 – 11:00am
Mini MBA: Mastering the Business of Architecture for EPs

TH107 **1 LU**
8:00 – 9:00am
Architects who Code– How Technology is Changing our Profession

TH109 **1 LU**
8:00 – 9:00am
Pros of Pro-Bono: How to Practice Philanthropy in Your Firm

TH117 **1 LU**
8:00 – 9:00am
What Women Want: Madame Architect on a Way Forward

EV218
8:30 – 11:30pm
EP Party

Day 3

FR202 **1 LU**
9:30 -11:00am
Bringing Gender Equity to Architecture: LA’s Women in Leadership

Day 4

SA204 **1.5 LU**
9:30 – 11:00am
Disruption and Design for a Sustainable Future

SA211 **1.5 LU**
9:30 – 11:00am
Aligning Your Firm’s Culture

SA415 **1.5 LU**
1:30pm – 3:00pm
2+2 Achieving Outstanding Design: COF & Young Architects

SA516 **1 LU**
3:30 – 4:30pm
Pay It Forward: The Benefits of Mentorship At All Ages

SA411 **1.5 LU**
1:30 – 3:00pm
How to Design Your New Firm for Success


A'19 Navigating Firm Culture


A'19 Mini MBA

Calling all Mini MBA and PIL alumni!

Have you participated in the Mini MBA at a previous conference or at a local or national Practice Innovation Lab event? The Young Architects Forum will be hosting informal meetups at A'20 to see what you have been up to since your last event.

Follow the YAF on social media and visit network.aia.org/YAF for additional details.

First time at conference?

During registration, request a buddy for your first time attendance. Plan on meeting your buddy at the AIA'S First Timer Buddies Meetup.

Looking for more sessions?

Check out the 'early career' track filter for additional sessions recommended by emerging professionals.


A'19 Mini MBA

Framework for design excellence, a primer

The AIA's Framework for Design Excellence supports a clear vision for delivering high performing, equitable, and beautiful buildings. The framework is made up of ten measures that grew from the AIA's Committee On The Environment (COTE) Top Ten Award, a well-known industry benchmark that has promoted these core values since 1997. It is a resource that can facilitate conversations with clients and communities and set meaningful goals and targets for climate action. As our society faces increasingly complex challenges, from climate change, to social equity, to an emphasis on individual well-being, good architecture provides a primary means to address these issues head on.

To give the framework some context, I'll outline some of the major milestones over the past few years that led up to its recent adoption. In 2017, the COTE Top Ten Award was overhauled to reflect the current state of cutting-edge practice, with an increased emphasis on the metrics behind the design. In 2018, Corey Squire, Helena Zambrano, and I led the development of the COTE Toolkit, along with over 60 volunteers spanning across the institute that provided deep subject matter expertise in all ten measures. The toolkit served as an 'operating manual' that demonstrates how to integrate the measures into projects. Concurrently, the AIA issued strong position statements on climate change, and incorporated Canon VI – Obligations to the Environment into our Code of Ethics. At the A'19 conference, the Resolution for Urgent and Sustained Climate Action was put forth to AIA delegates, volunteer chapter leaders from all over the country. Adopted by a landslide, the architecture community signaled its desire to choose relevance in the era of climate change. In response, the AIA Board of Directors swiftly adopted the COTE Top Ten Award criteria and recast it as the Framework for Design Excellence last September. The framework has been influenced by these and many other initiatives across the institute. Attention must now turn to integrating the ten measures into every practice, every building, and every city.

The framework provides a construct for an open-ended dialogue that facilitates a more deeply integrated and rich design solution. It asks the essential questions that set the project up for success at its earliest stages. It leads the project with a vision instead of a checklist, mandating design teams address nuanced concepts of culture and place. It is accessible to a lay audience, in a language that which they can understand and contribute. These questions not only illuminate opportunities to integrate sustainability, but to further a deeper understanding of our clients, future building inhabitants and communities in which they reside.

The framework is an extremely powerful design tool that works in a myriad of ways. It provides flexible guidance without overly prescriptive solutions. Each measure unpacks best practices, project examples, tools, and influential research. It is curated to highlight essential criteria, promote searchability and ease of use. Rather than another detailed report focused on an isolated measure that must work in all conditions, the team developed a holistic resource that summarizes the landscape of best

Sweetwater Spectrum Community By Leddy Maytum Stacy Architects, a 2015 COTE® Top Ten Recipient. (Image Credit: Tim Griffith)

Design for Integration: What's the big idea? How does the project demonstrate the intersection of design excellence and sustainable performance?

Design for Community: How does this project promote equity, make the most of its surrounding community, integrate with it, and give back?

Design for Ecology. How does this project respond, connect, and contribute to the surrounding ecosystem?

Design for Water: How does the project use water wisely and handle rainfall responsibly?

Design for Economy: How does the design show that higher performance can be cost-effective?

Design for Energy: How much energy does the project use, is any of that energy generated on-site from renewable sources, and what's the net carbon impact?

Design for Wellness: How does the design promote the comfort and health of those who spend time in it?

Design for Resources: How were the decisions about the materials used based on carbon impact?

Design for Change: How does the project design anticipate adapting to new uses and to climate change?

Design for Discovery: What lessons for better design have been learned through design and occupancy?

practices to encourage deeper adoption in everyday practice. It removes the barriers to high performance and /high design by focusing on proven low cost, high impact strategies. that work most of the time.

"The framework provides a construct for an open-ended dialogue that facilitates a more deeply integrated and rich design solution. It asks the essential questions that set the project up for success at its earliest stages."

2020 is a big year. We celebrate the 50th anniversary of Earth Day and the 30th anniversary of COTE. We're also ratcheting up the 2030 Commitment goals to an 80 percent savings target, and challenging firms to join up. I am proud that in the first few months of this year, signatories have increased by ten percent, and the program has set aggressive goals of doubling in size and significantly increasing reporting year over year. Another inspiring development is the explicit inclusion of the framework as an integral part of the AIA's honor awards. Many AIA chapters have also adopted the framework into their local architecture awards programs. I am deeply inspired by all of the hard work that is's being done across the institute to elevate the framework and its vision, and look forward to supporting it however I can.

Left: Wayne N. Aspinall Federal Building And U.S. Courthouse, a 2010 COTE® Top Ten Recipient. (Image Credit: Kevin Reeves)
Above: E+ // 226-232 Highland Street Townhouses, a 2015 COTE® Top Ten Recipient. (Image Credit: Urbanica)

Tate Walker AIA, LEED Fellow
Walker is the Director of Sustainability at OPN Architects. He co-led the development of the COTE Toolkit in 2018 and is co-chair of the AIA's 2030 Commitment.

2018/2019 ACSA/AIA COTE Top Ten for Students

A conversation with awardees Phil Riazzi & Cameron Foster

Phil Riazzi
Riazzi is a registered architect with five years of professional experience finishing his Master of Architecture degree at Clemson University. He is passionate about the adaptability of buildings, the benefits of working with your hands, architecture serving as a catalyst for change, and innovations in construction technology that can be leveraged to tackle social and environmental challenges.

Cameron Foster
Foster is a Master of Architecture student at Clemson University and has one year of professional experience in the field of architecture. Prior to attending Clemson, he served four years in the United States Marine Corps and obtained his Bachelor of Science in Architecture at Portland State University. He is passionate about community-based, sustainable, and innovative design and the influences of academia on architecture.

John Clark (JC): Acclimate was recognized by the AIA and ACSA in the COTE Top Ten for Students program. Describe the environmental and social problems that your project sought to address?

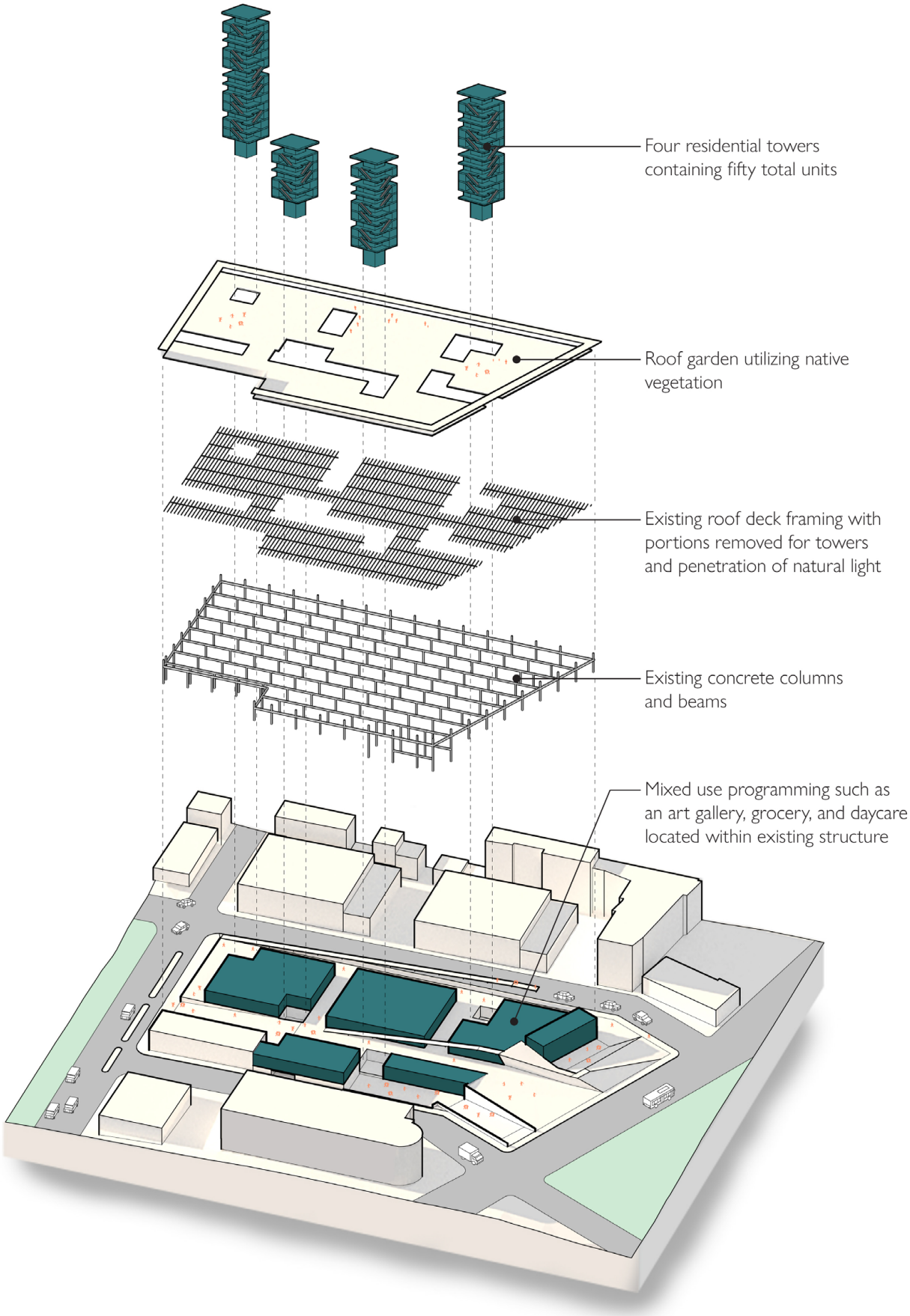
Phil Riazzi and Cameron Foster (PR and CF): Environmentally, we focused on the power of adaptive reuse as a sustainable design strategy. We believe it is imperative that architects moving forward are equipped to successfully adapt existing buildings and design our future buildings in a way that they can be adapted as well. Given the world's existing building stock and rapid urbanization of cities all over the world, adaptive reuse as a sustainable strategy is as timely as ever. In our project, the reuse of the concrete alone would save over 1.1 million pounds of CO2.

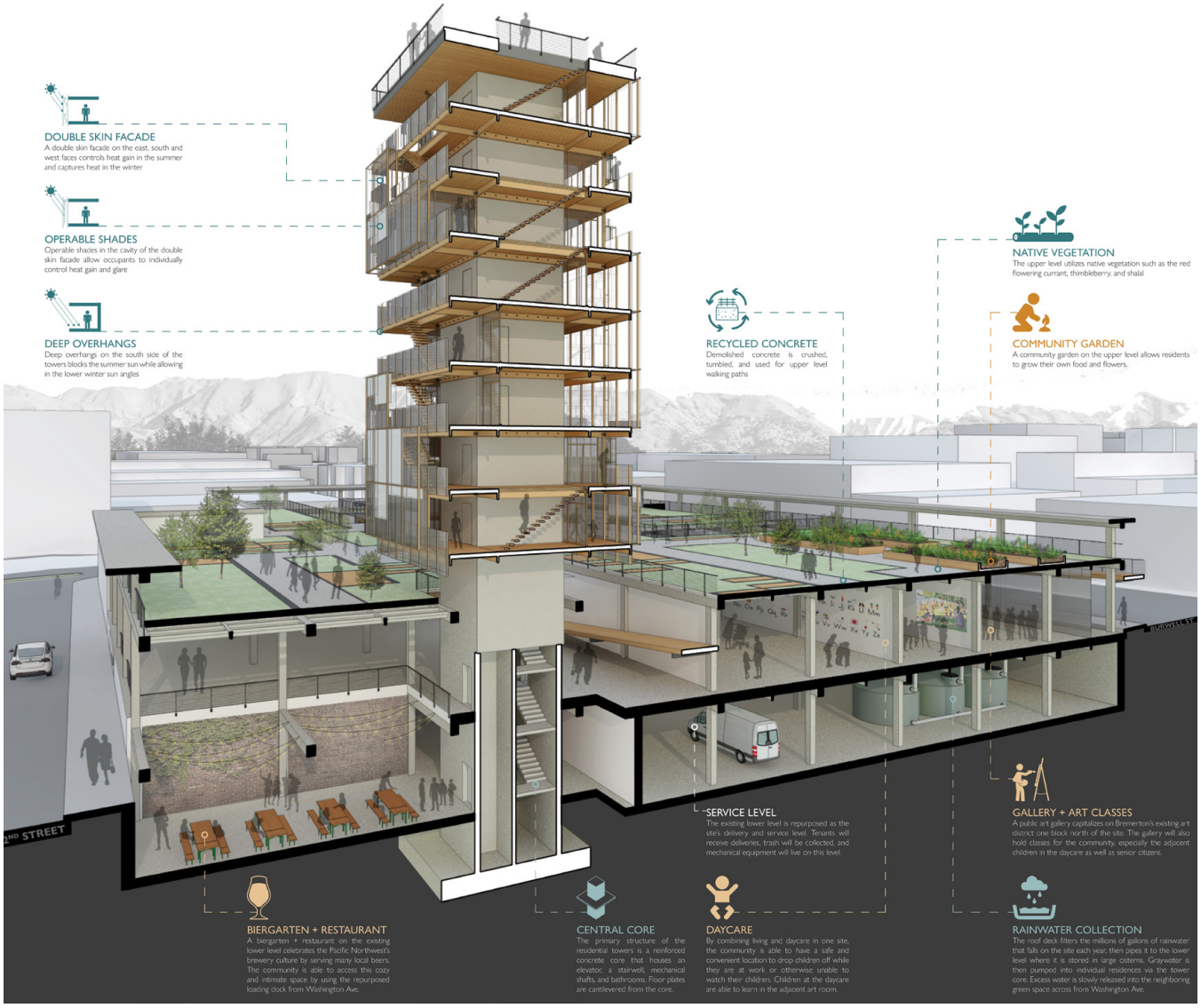
Socially, our focus was twofold: creating architecture that allows people to comfortably age in place and exploring the notion that uniqueness and privacy should not be sacrificed in the name of mixed-use development. Our global population is living longer than ever before, so aging in place is an important topic that will only become more critical for architects to understand. As people age, they are often forced out of their communities because they can no longer afford to live there, it's not physically accessible, or the services they need are not available, creating a lack of generational diversity in communities.

We believe that the benefits of a mixed-use and walkable community are great but that people's desire for a space that is uniquely theirs is not going anywhere. In the extreme reaction to suburban life, we have gone too far and crammed people into identical boxes that lack character. People want to live in dense, walkable communities, but they still want a personal retreat that offers privacy and personality.

JC: Walk our readers through Acclimate and how the proposed concept responds to these problems?

PR and CF: Acclimate is a project about the power of taking urban spaces from cars and giving it back to people. Located in downtown Bremerton, Washington, this project is the adaptive reuse of a three-story, 500-spot parking garage. Originally built in the 1960s out of reinforced concrete, the structure's original purpose was a J.C. Penney department store. In the late 20th century, the structure was converted into a parking


Four residential towers
containing fifty total units
Roof garden utilizing native
vegetation
Existing roof deck framing with
portions removed for towers
and penetration of natural light
Existing concrete columns
and beams
Mixed use programming such as
an art gallery, grocery, and daycare
located within existing structure



garage. With a footprint of 80,000 square feet, the opportunity to positively impact the fabric of downtown is tremendous. The project is designed as two distinct phases. The first phase involves creating public programming within the existing 152,000-square-foot building. With a floor, structure, and a roof already in place and an open floor plate, these spaces would be able to be built out with relatively low investment. The second phase includes four residential towers with a footprint of just 280 square feet each, above the existing structure, adding over 48,000 square feet of residential programming.

The primary strategy of Acclimate is the decision to reuse the existing structure, which will save on the production of new resources and the intense amount of energy and resources needed to construct new buildings.

Fifty residences are elevated in four different towers to provide views of the surrounding context, connecting people to the city of Bremerton. A small footprint cuts down on demolition and provides the unique opportunity for every resident to have an entire floor plate as their residence. The minimal structure of the towers is accomplished through a reinforced concrete core that houses the towers' elevator, stairs, utility chase, and a bathroom on each floor. LVL beams are fixed to the core and support the five-ply CLT floor slabs. A topping slab is provided to minimize acoustic transmission between units. By leveraging the Pacific Northwest's supply of wood, the project cuts down on embodied energy and uses a renewable resource native to the area.

Three different treatments to the towers' exterior skin are employed to control solar heat gain while creating a dynamic aesthetic. A double-skin facade on the east, south, and west faces controls heat gain in the summer and captures heat in the winter. Deep overhangs on the south side of the towers block the summer sun while allowing in the lower winter sun angles. Throughout most of the year, the wind predominantly comes from the south. In the summer, however, the prevailing winds come from the north. To achieve passive cooling in the towers during the summer, low openings on the north facade pull cooler air through the unit and exhaust the warm air at high openings in the south facade.

The large porches allow people to enjoy the temperate climate of Bremerton while being covered from the rainfall that is prevalent in the area. These large porches also connect residences via stairs to their neighbors who live on the level above and below. By doing this, the project has stacked the traditional neighborhood where front porches are connected via sidewalks. The public programming integrates much-needed resources in a key location in the city. The site sees thousands of people move through it each day on their way south to the ferry that connects Bremerton to Seattle.

A wellness center provides preventative and curative care for the community all in one location. This format acknowledges that all elements of human wellness are connected and brings together the required services for one to stay healthy. The range of services in the wellness center include traditional medical offices, a fitness center, physical therapy, counseling, and psychiatry. A comprehensive wellness center allows residents of the community to comfortably age in place.

A rooftop utilizing native landscaping and a rainwater collection system help address the sensitive ecological issues inherent to the site. Located adjacent to the Puget Sound makes addressing stormwater runoff specifically very important. For this reason, the rooftop collects rainwater into cisterns located on the lower level that pumps the water into the core of the towers. Excess water is slowly released into the neighboring green space across Washington Avenue to the east.

Acclimate aims to be a model for maximum gains with minimal intervention. Unfortunately, many architectural projects fail due to their heavy-handedness or overambitious scope. Acclimate is an example of a small intervention that would yield incredible results for the city of Bremerton. At such an important location in Bremerton and with the rise in alternative forms of transportation, it's critical that this building be given back to the community.

JC: What takeaways and concepts can be applied to current architectural practice and real estate development?

PR and CF: The idea of manipulating the typical row housing we see in suburbia into a vertical sequence of units for people to inhabit is no new concept in architectural practice. However, with the typically sought-after "American Dream" lifestyle of suburbia becoming increasingly difficult to sustain, building vertically needs more attention. This project looks to commune residents with respect to the individualism a house with a yard can provide by allowing an entire floorplate to be occupied by a single resident while still maintaining the connection to a neighbor's front porch. A project like Acclimate manageably compacts the necessities of a home into a single floor and allows for an elegant, modest, slender series of towers to extrude themselves through an existing structure at four circumscribed points. This concept can serve as a precedent for sensible urban housing.

JC: How are architecture students addressing, or preparing to address, the environmental challenges in our built environment?

PRand CF: Architects have an incredible responsibility to address the issues of climate change and smart resource management. It needs to get to the point where "sustainable architecture" is no longer a phrase. Architecture should inherently include the principles of sustainability. Architecture firm websites will eventually no longer need to include a project tab for "sustainability" on par with saying "residential" or "civic." All architecture should be sustainable architecture.

We think schools across the country, especially Clemson, do a great job of mixing the principles of sustainable design into everything students do. The topic is not meant to be taught in a single three-hour class once per week. It's a topic that has social, economic, aesthetic, and political implications across the whole field of architecture.

JC: How do you hope to impact the profession after graduation?

PR: I hope to impact the profession by using all of my previous experiences to constantly shape how I practice. Architecture is such a broad field, which is one of the reasons I originally became interested in it. I plan to take my individual interests with me and find ways to push these ideas in the professional world. I also believe strongly in the tie between architectural education and the profession. I hope to keep a consistent connection to academia while I work. It's incredibly freeing to periodically remove the constraints of the field to look at topics in a more pure, academic setting. It's an excellent arena for challenging the status quo. The more that ideas and experiments from the academic world can percolate into the professional world, the better.

CF: I aspire to impact the profession by remaining explorative, creative, and innovative in design solutions that I have been able to freely practice in academia. I consider myself to have been a practical designer while in school and because of that have been able to retain practicality with creativity and exploration in design. I hope to remain involved with the education of architecture while continuing to progress my professional career when I do become a licensed architect. I have had the opportunity to assist in teaching different classes while being a student, and after doing so, I understand the importance of passing along knowledge and techniques to younger aspiring architects in order to improve the way that we design in the future.

John J. Clark, AIA, NCARB
Clark is an architect with RMKM Architecture in Albuquerque, N.Mex. Clark is a graduate of the University of New Mexico and is the 2019-20 Communications Director for the AIA National's Young Architects Forum.

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 within the AIA. It is 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.

Many components and emerging professionals today are familiar with the grant or have been fortunate enough to receive it, but only a handful of deserving programs actually submit grant applications each year. To increase awareness about the range of programs that have received grants, the YAF's Knowledge Workgroup has gathered information from four successful 2019 recipients to provide insight on the application process and show the diversity of programming types. The 2020 call for grant applications is to be released this spring, and we encourage all components to take advantage of this opportunity.

AIA NY: Event Broadcast in Central New York

AIA New York State

Program/initiative name: Cooling the Burn in Burnout
Applicant name/position: Cara Longobardi/Associate Director of Member Services
Grant amount requested: $4,400
Grant amount received: $2,200
Program/initiative goals: As emerging professionals struggle to create a work-life balance that was not the focus of an architect's career in the previous generation, burnout becomes very real. Being proactive will create more effective leaders at work, at home, and in our communities.

The program focuses on the following topics:

- Strategies for carving out time for yourself
- Time-management skills
- Resources for self-preservation and self-growth
- Tools to help you recognize that you are struggling and how to broach the topic with yourself, your peers, and, importantly, your firm leadership

How did you hear about the COF EP Grant?

Component Connect

How has the grant helped your AIA chapter and your program/initiative in 2019 and beyond?

We've been able to offer targeted programming to our emerging professionals that we otherwise may not have been able to. Engaging our EPs has been a focus for several years, and this has allowed us to do so, using content that they've curated and have expressed a need for. The program was recognized for an Association Excellence Award by the Empire Society of Association Executives.

AIA NY: Southern New York Viewing Party

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

Work-life balance is a hot topic across all professions, but especially architecture. In 2019, the World Health Organization officially recognized burnout as a legitimate diagnosis, making this timely as well as topical. We used this information in our application to stress the importance of presenting strategies to young architects. We also used information about our 2018 COF Grant program, emphasizing the need to continue on this trajectory.

It was also important that we had the program description and learning objectives laid out in detail, as well as our panelists.

What recommendations or tips can you provide for future applicants?

Determine a need that your emerging professionals have told you they have — if this is something they are asking for, they will participate. Successful programs will help boost your chances of receiving the grant.

AIA Oregon

Program/initiative name: Oregon Emerging Professionals Program Development
Applicant name/position: John R. Webster Jr., AIA/ Chair, Eugene section Emerging Professionals Committee
Grant amount requested: $5,000
Grant amount received: $5,000
Program/initiative goals: Develop local connectivity for emerging professionals, ARE study tools, and professional development

How did you hear about the COF EP Grant?

We stay connected with the AIA staff members of our state, who actively review the various opportunities available through AIA. Knowing that we were attempting to develop the emerging professionals community, this particular grant was shared with me by an AIA Oregon staff member, Kathy Wendland.

AIA NY: Event Panelists

How has the grant helped your AIA chapter and your program/initiative in 2019 and beyond?

We utilized the grant to provide equitable educational opportunities for emerging professionals in the wake of chapter consolidation within our state.

We started by creating a lending library in each of the five sections under AIA Oregon. Each library consists of study materials for ARE and doubles as reference materials for all AIA members.

A location was identified in each section to house the library, along with a designated volunteer librarian to manage the collection. Library locations, librarian contact info, and materials in the collection are all available on the state website. Links to free online study materials are also provided on the website.

To help those in more remote locations, we are currently developing an internal state scholarship for members to apply for financial assistance to online study materials.

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

I believe that our successful grant application was due to conveying a clear picture of our current chapter situation, along with a plan to provide tangibly equitable resources, in the form of lending libraries, to all members across the five sections.

We also highlighted the collaboration with other committees within our chapter. Finally, we are attempting to create a culture of mentorship throughout the organization. Utilizing the College of Fellows community, we plan to connect emerging professionals to those with more experience. We are also working to give emerging professionals an opportunity to serve as mentors by connecting them with local students.

What recommendations or tips can you provide for future applicants?

Think about how your grant award can assist more than your immediate community. The actions you take with the funds can have positive ripple effects that go beyond the initial implementation.

Make sure your application is reviewed by members of your chapter's board. They can help you to identify additional resources like matching grant funds as well as serve as content, spelling, and grammar reviewers for your submission. Having support from your governing body early helps to assure easy utilization of the grant once awarded.

AIA Minneapolis

Program/initiative name: AIA North Central States Region Website and Resource Database
Applicant name/position: Katie Kangas, AIA/North Central States Young Architect Regional Director
Grant amount requested: $318
Grant amount received: $300
Program/initiative goals: The North Central States Region sought to provide an easily manageable and searchable website and resource database to share free content with members.

How did you hear about the COF EP Grant?

I heard about the grant through YAF. The former NCSR YARD won a grant a few years ago to start the annual EP Summit. Our efforts to launch a website and share regional resources seemed like a good fit for the capacity of the grant.

How has the grant helped your AIA chapter and your program/initiative in 2019 and beyond?

In 2019, the NCSR launched http://www.aiancsr.com through the Web development platform Wix. The site has improved the visibility of the regional AIA emerging professionals and eased the sharing of regional resources. It also provided a platform for administering and recognizing the new NCSR EP Friendly Firm Award. An events resources folder also includes documents that record the process and success of events within the region so others may replicate.

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

The NCSR emerging professionals were well positioned to initiate a prototype Internet platform for sharing programming and event resources and toolkits. Our growing network of skilled and motivated emerging professionals had the energy to pursue a small-scale effort that could be emulated by several other EP groups.

What recommendations or tips can you provide for future applicants?

Propose new ideas that uplift and support others. Try new technology or processes.

AIA Honolulu

Program/initiative name: Student Design Awards
Applicant name/position: Jason Takeuchi, AIA/Founder, Student Design Awards
Grant amount requested: $5,000
Grant amount received: $5,000
Program/initiative goals: The AIA Honolulu Student Design Awards Program was established through a grassroots effort in 2016 to recognize annual student achievements in the design studio and to provide a forum for student work to be celebrated beyond the academic setting. These awards have fulfilled a genuine need in Honolulu to bridge the gap between future practitioners and members of the AIA.

The program distinguishes itself through the assimilation of a diverse professional jury and by honoring students at AIA Honolulu's annual Design Awards Gala (AIA Honolulu's largest event, of over 300 people) with similar recognition as professional awardees.

How did you hear about the COF EP Grant?

AIA Honolulu had previously applied for the COF EP Grant unsuccessfully in past years, but with a different program.

How has the grant helped your AIA chapter and your program/initiative in 2019 and beyond?

The awards are a highly anticipated opportunity, both by students in design schools and by eager and supportive AIA volunteers. Realizing that the grant will promise longevity to the Student Design Awards Program has been exciting for students and even more promising for AIA Honolulu in terms of students


2017 Student Design Awards Recipients


2018 Student Design Awards Recipients

who will join the Institute. The grant has also tremendously boosted confidence in our leadership to strengthen the integral relationship between students and professionals.

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

The reasons why we believe the grant was fully supported are strong financial need, return on investment, and potential for success.

The financial need for the program could not be understated. Individuals were making personal financial contributions, including volunteers and chairpersons, just to maintain the program's existence. Since AIA Honolulu did not have a budget for the program but did have sponsorship avenues, financial support was shown through matching donations from the University of Hawaii School of Architecture and Chaminade University. It was clear that without the grant, the program may not be able to continue in future years.

Most COF EP grants have gone to programs supporting current AIA members. AIA Honolulu's grant application emphasized the intent to invest in the future of the profession. Because students attend the Design Awards Gala for free as an award entrant, they are exposed to the professional community and are much more likely to join as Associate AIA members and continue on to full AIA membership. So far, there has been a positive link between past student winners and their affiliation with AIA Honolulu, who want to continue to stay in Hawaii and work.

Potential for success was important to convey. Jurors needed to know that AIA Honolulu had a strong committee, commitments from design schools in Honolulu, and a plan for future years. AIA Honolulu felt strongly that in order to have a successful program, the Student Design Awards would need to continue for at least another five years in order to gain traction with the design community. Further, if the program was discontinued, it would leave a short list of past winners and undermine the initial efforts of the program.

What recommendations or tips can you provide for future applicants?

- Clearly describe how the College of Fellows is involved in your idea, whether it be their endorsement or direct participation.
- Show unmistakable financial need. Ask yourself, can the program/initiative happen without the grant? If the answer is yes, chances are that your application is less likely to be chosen.
- Be specific in all aspects. Show exact numbers in your budget, write names of specific people involved, show historical and numerical data if it helps.
- Be familiar with the National Associates Committee and Young Architects Forum. A clearly defined link between the NAC/YAF increases your chance of selection.
- Show optimism in the outcome and the future impact.
- If your chapter doesn't have success at first, apply for the grant under a try a different program in your chapter.
- Add personality to the narrative by allowing the letter of recommendation to tell a story.

A complete list of past recipients of the AIA COF Emerging Professionals Component Grant can be found here.

Jason Takeuchi, AIA, NCARB
Takeuchi is an architect at Ferraro Choi and Associates in Honolulu, and the Young Architect Regional Director for the AIA Northwest and Pacific Region. He is a 2018 Associates Award recipient.

Embodied carbon: apples to apples

How can we integrate life-cycle thinking to inform and influence material decisions when they are initially visualized?

Melanie Silver, AIA, LEED AP BD+C

Silver works with design teams to meet rigorous sustainability targets through data-driven investigation. She manages the building performance simulation responsibilities in the Building Science Group and leads Payette's Materials Research Team, responsible for developing and implementing material policy. She represents Payette regularly at client meetings and in public presentations. Silver educates the design team on issues relevant to building performance, while understanding which elements are critical to the building's design or program

Rebecca McGee Sturgeon, Assoc. AIA:

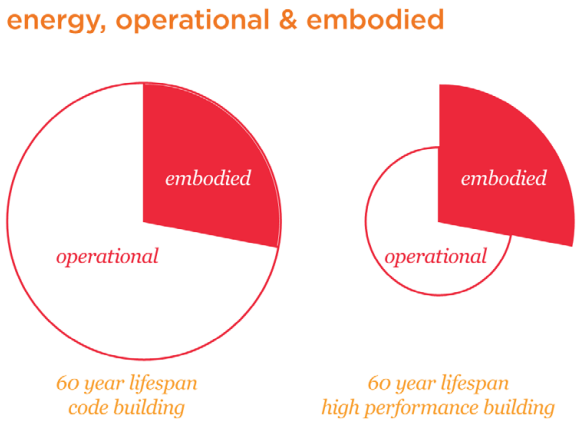
At Payette, McGee Sturgeon primarily works within the firm's science practice, focusing on renovation and adaptive reuse. In addition to her project work, McGee Sturgeon is a member of the Materials Research Team and leads the LCA research. Prior to joining Payette, she worked as an architectural R&D designer in building materials and systems assembly design at Saint-Gobain NRDC and before that as a senior designer and art director for Qorvis MSLGroup, a communications agency in Washington, D.C.

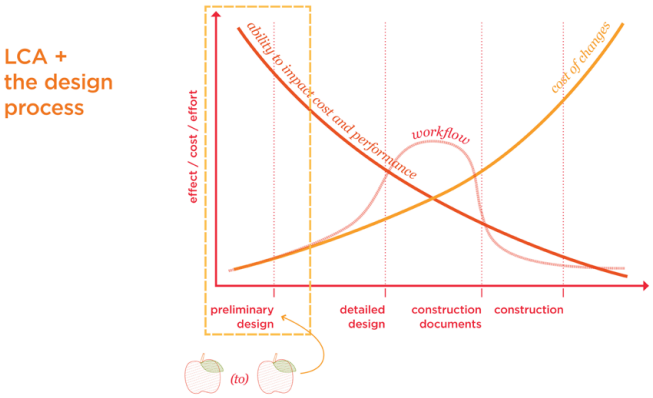
Research at Payette often starts with a simple question and desire to make more informed choices on key design decisions. Usually, our questions are broad, and investigation quickly leads us down multiple rabbit holes of factors upon factors that impact the evaluation of any one question. We, like so many others, are interested to make carbon reduction an integral part of our design process, so we start by identifying a target that maximizes impact toward our goal. This target lays the groundwork for further development, refinement and knowledge advancement to embed a new way of thinking into the culture of our design process.

Jennifer Hardy (JH): What inspired the research topic?

Melanie Silver (MS): The recent reports from the IPCC have brought awareness to the urgency that embodied carbon must be addressed. Forty percent of the global carbon emissions come from the building sector. When you combine the impact of operational and embodied carbon emissions from buildings, they represent the largest single emitter of carbon. As architects and stewards of the built environment, it is our imperative to dramatically reduce this. Historically, at Payette, we have been focused on reducing operational energy, but looking at the next 10 years (which considers the time value of carbon that we must reduce carbon between now and 2030 in order to stay below 1.5°C temperature rise), the embodied carbon of new construction will far surpass the carbon needed to operate those buildings. We need to simultaneously address performance and evaluate our choice of materials in order to meet the goals of the Paris Agreement.

The building industry typically focuses on the 60-year life span of a building when performing Life Cycle Assessments (LCAs) to assess the total carbon emissions. But if we evaluate the carbon emissions of buildings over the next 10 years, toward AIA 2030 goals, the overwhelming emphasis on carbon reduction is on embodied carbon, which must be reduced with greater urgency in order to stay below 1.5°C, per IPCC. This is why Ed Mazria and





Architecture 2030, which instigated the AIA 2030 Commitment, has also set an Embodied Carbon Challenge that has a forty percent reduction target stepping down towards a net-zero embodied carbon in 2050.

We were recently studying multiple facade systems for the new Pennsylvania State University College of Engineering Research & Teaching Space, West 2, when the team asked, "What if we considered the embodied carbon of these options to inform our decision?" Luckily, this newly formed research team, led by Luke Laverty, Melanie Silver, and Rebecca McGee Sturgeon, was already working on this question. They assessed our facade system options and provided a comparison chart of the different embodied-carbon impacts. We were ready to use this as one of many factors to inform our facade selection and then paused to challenge our assumptions and ask, "What is the overall net benefit of reduction in embodied carbon in the facade in context of the overall building? Are we targeting the right building component, and how much weight should we give to this information to inform our decision?"

"The longer the delay in reducing CO2 emissions towards zero, the larger the likelihood of exceeding 1.5°C, and the heavier the implied reliance on net-negative emissions after mid-century to return warming to 1.5°C." — *2018 United Nations IPCC (Intergovernmental Panel on Climate Change)*

JH: Why target facades when attempting to reduce embodied carbon in buildings ?

MS: Facades contain the second-largest percent of embodied carbon in a building (after structures), and the architect is in a position to greatly influence and reduce the impact based on the aesthetics of material choices. Facades are also highly complex, so having easy-to-access data encourages holistic, sustainable thinking.

JH: How is embodied carbon currently measured for a project?

Rebecca McGee Sturgeon (RS): There are a number of great tools and resources that currently exist and more that are being developed. Take, for example, Tally, which is a Revit plugin developed by KieranTimberlake. As you know, the design process can vary widely from one firm, or one person, to another — a lot of these tools require a certain amount of design decisions to be made or developed within a specific modeling software, like Revit, in order to provide the LCA results. At Payette, we use a range of different softwares and tools early in the development of a design. However, usually a more detailed Revit model is not in the works until later in the process. The motivation behind our research was to provide a baseline of knowledge and information that could be shared and integrated into design discussions without the need for a developed 3D model.

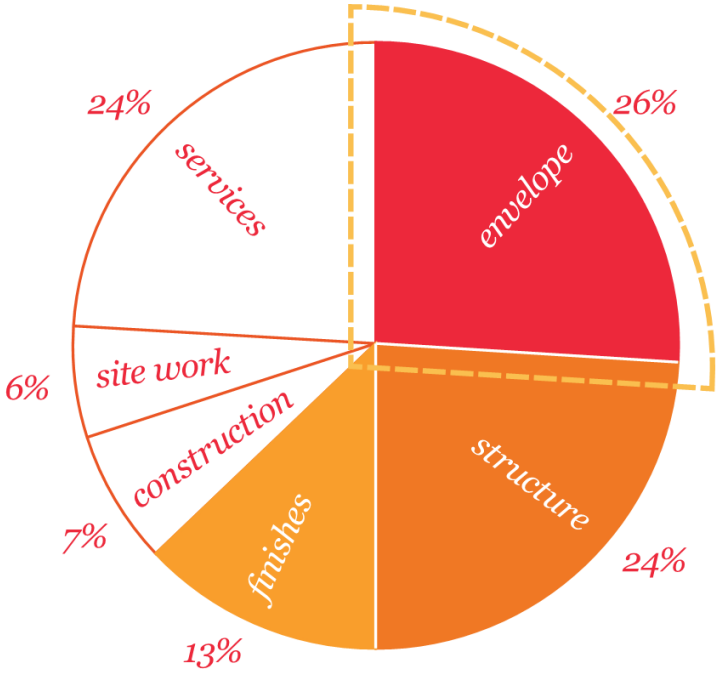
As a research team, we decided to start by focusing on facade systems due to the relative impact they have on embodied carbon and the design of a project. We collected information about the assemblies we use most commonly as an office and set up the parameters for the study to make an apples-to-apples comparison, using Tally.

JH: Can you elaborate on what it means to do an apples-to-apples study?

RS: In order to be able to compare the assemblies, certain variables need to be standardized across the system boundary. We addressed this by establishing a module with the same height and width and defined the system from exterior finish to interior finish without including primary building structure.

MS: We also model each assembly so they have the same R-value; this takes out the factor of performance and

where is the embodied energy in a building?



operational energy. We ran parametric THERM models (2D heat-flow software) for each system to account for thermal bridging and different R-values of materials, to calibrate the thickness of insulation for each system. Then we adjusted the insulation thicknesses in our initial assembly models and are able to make apples-to-apples comparisons across the facade systems.

Once the apples-to-apples facade systems were established, the research team began evaluating them using Tally, to create an accessible database to evaluate the embodied carbon of facade systems during the early stages of design. System types evaluated thus far include masonry veneers, face-sealed assemblies, and rainscreens.

JH: How do you evaluate the data and interpret results?

RS: As a team, we've talked a lot about how to interpret and present this research. We believe Global Warming Potential is by far the most pressing impact category. However, we also feel strongly in maintaining a holistic lens. We have gathered additional research on weighting of impact categories from across the industry and are incorporating this as a lens in which to view our results — something that can be seen and evaluated in one image.

JH: - I often hear people reference the carbon impact tied to the distance a material travels to the site, but how much weight should we give to that factor when selecting materials?

MS: We found in our results that if we look at the breakdown of where the impact comes from, the majority is in the product phase, which is the process of extracting and manufacturing the material or product. The transportation has typically been a small percent of the total, which means that how the material was made is more impactful than the journey it takes to a construction site.

JH: Once the QA/QC process on the research is complete, what is next?

RS: We have an open-source web-based data-visualization tool in the works to share our results (coming this spring!) and are also beginning work on the next phase of research, which will be to evaluate other common systems and materials in the same manner. We are excited by the surge of conversation surrounding embodied carbon in the industry and are continuing to pursue the integration of life-cycle thinking into our practice.

Jennifer Hardy, AIA
Hardy is a Senior Associate at Payette in Boston, Mass. Hardy is an active member at the Boston Society of Architects, co-chairing the Women in Design committee, and is a 2020 Young Architect Award winner.

Transition design

Building a sustainable future

Transition design, in part defined by Dr. Layla Acaroglu, founder and CEO of the Disrupt Design consultancy, seeks to "build the knowledge, intervention opportunities and tools that help activate a global community focused on purpose-driven change for positive impact on the planet." Although the definition of transition design depends on whom you ask, Dr. Acaroglu touches on the highlights – systemic and holistic change, carried by vision, that creates a positive and lasting shift in public consciousness. In the context of climate action, transition design is an invaluable tool in the pedagogical arsenal to create positive shifts in mass consciousness and culture through revelations in decision-making, collaborative design, and inclusive processes.

With regards to decision-making under the transition design framework, vision, and having the right words to describe that vision, is paramount. An acknowledgment of the various factors in examining "wicked problems" is required at the onset of problem-solving. That is understanding when you "pull" at a variable in the pipeline of plastic in the oceans, for example, you are "pushing" somewhere else in the system. The big picture is composed of countless interconnected variables, which is why climate change has been referred to as a "hyperobject" by environmental philosopher Timothy Morton. According to Morton, author of Hyperobjects: Philosophy and Ecology after the End Of The World, a hyperobject is something "you can study and think about and compute, but that [is] not so easy to see directly. Things like: not just a Styrofoam cup or two, but all the Styrofoam on Earth, ever." In contemplating global warming, Morton writes:

Thinking ecologically about global warming requires a kind of mental upgrade, to cope with something that is so big and so powerful that until now we had no real word for it....the concept of hyperobjects gives us a single word to describe something on the tips of our tongues. It's very difficult to talk about something you cannot see or touch, yet we are obliged to do so, since global warming affects us all...human beings are now going through this upgrade. The upgrade is called ecological awareness.

The first step in creating meaningful large-scale change is giving communities the vocabulary to understand the complexity of a concept like global warming. We can then utilize collaborative design to break down threads of the hyperobject and create both empowered and informed change.

Presently and in the future, interdisciplinary intersections are where innovation will occur. Design culture is spreading beyond disciplines that formerly "owned" design – with the understanding that everyone can design, and we create better results with a wider diversity of perspectives. By bridging across fields of study, and creating new ones, we create increased resilience and nimbleness. In the same way a diverse financial portfolio insulates you from economic upheaval, so too does diverse design. In a future (and increasingly in the present) with rapidly changing variables and conditions, the more intellectual resources we can pull to solve "wicked problems," the better.

Transition design, a burgeoning field, holds significant promise for a paradigm shift in the way we view and do design. To solve the increasingly convoluted challenges our society faces, we will have to do more than create collaborative, and diverse teams, or find the right words to craft a vision, although both are good foundations. We will need to come together with our best resources to build something new, metamorphic, and scalable to alter our current course in favor of a more sustainable one.

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Robyn Engel, AIA
Engel is a project architect at IKM Architecture in Pittsburgh, Penn. An ardent reader, Ms. Engel most recently served as jury chair for the 2019 Lynd Ward Graphic Novel Prize.

Towards a regenerative future

A look into the sustainability action plan of bnim, ARCHITECT 50's top sustainability firm

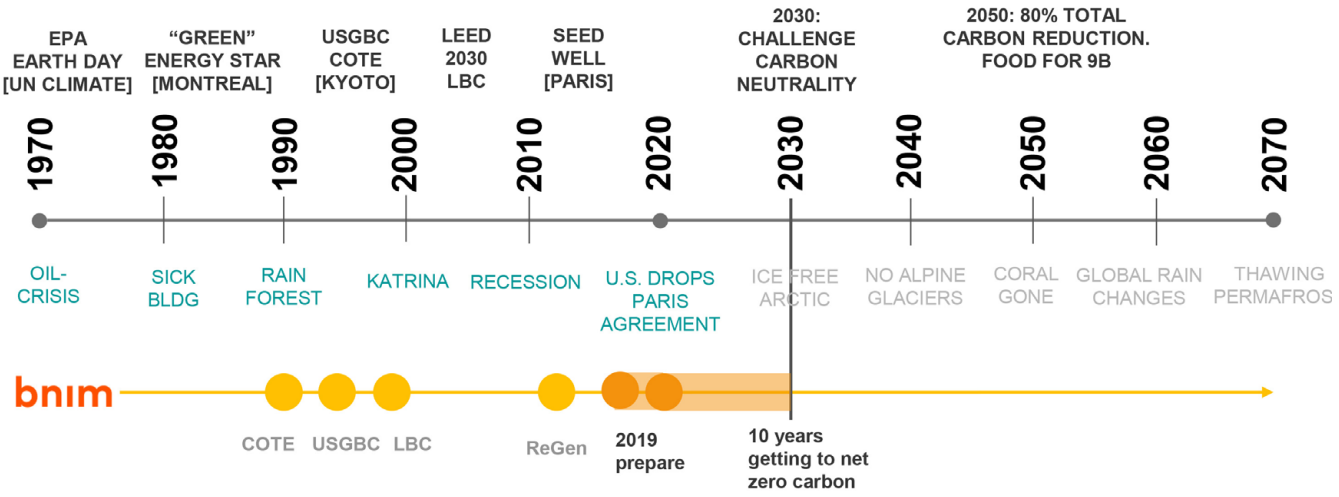
BNIM has long been a leader in the green building movement. We were instrumental in the development of the USGBC, LEED, COTE, and Living Building concept . Through our involvement, the firm has redefined design excellence to elevate human experience with aesthetics and building performance. This year marks our 50th practicing architecture, planning, and design. To celebrate the past, we look toward the future. We have redoubled our commitment to sustainable design by developing an aspirational Sustainability Action Plan.

As the 2018 IPCC U.N. report warns, climate action is urgent, and as the AIA's Big Move Toward Environmental Stewardship outlines, the architectural profession is positioned to be a key leader for climate action. We have spent the past year training staff and establishing baseline office-wide goals in our quest to shape a regenerative future. We strive for net-zero carbon emissions across our portfolio of projects by 2030, including modeling emissions associated with construction and using carbon sequestration such as new soil and landscape to draw down carbon. In what follows, we will share more information on our Sustainability Action Plan and the progress we have made.

BNIM Sustainability Action Plan Overview

The understanding that everything is interconnected is at the root of our work through Human Purposed Integrated Design (HP.id). As our guiding approach, HP.id is not about form. It is about creating spaces where nature, humans, context, materials, craft, technology, and client mission intersect. It is an approach that makes us hold in balance all the aspects of program, impact, experience, and performance. It requires that we change the conversations we have with our clients and collaborators and alters our process to ensure that our work best serves the full range of its purposes. HP.id makes us ask questions that yield extraordinary outcomes and unique aesthetics for each project. The BNIM 2020 Sustainability Action Plan was developed to further our mission of enhancing the human condition through HP.id.

The Action Plan is not a formal document but a support system for project teams to succeed. It includes a framework, educational presentations, tools, resources, and operational and advocacy efforts. Our ambition includes three long-term outcomes:



- Integrate our core values throughout our business
- Contribute to the social, environmental, and financial excellence of our people and projects (triple-bottom line)
- Solidify BNIM's position as a local and global leader in sustainability

Using the United Nations' decade-by-decade list of likely consequences of climate inaction to understand some of the specific global challenges that lie ahead, we began by focusing on the immediate challenges of on-site energy use and production, potable water use, and site and building climate resiliency. Referencing the rating and measurements recommended by the AIA COTE Top 10 Toolkit, LEED, the Living Building Challenge, RELi, U.N. Sustainable Development Goals, SEED, WELL, JUST, SITES, and more, we developed a series of categorical measures to apply systematically to current and past projects, as well as our operational practice. These categories are energy, water, ecology, wellness, equity, and resources.

Action Plan Framework

In development of our tools, we established a summary sheet for each category. The sheets are interactive and link directly to resources. Each summary sheet contains key information, including the overall aspiration, approach metrics, "If you could only do a few things," "Questions for Engagement," and resources.

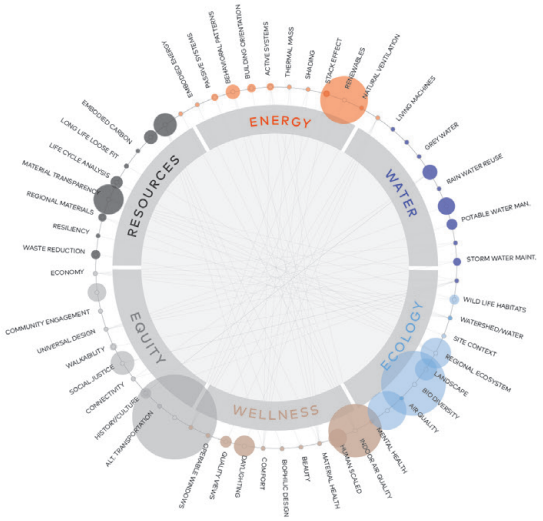
As part of our increased efforts, our Action Plan asks that all projects, including those without specific sustainable guidelines set forth by the client, set goals (with the client) and track metrics in the six categories mentioned above. We have identified metrics to be tracked firm-wide within each category. This allows us to see a broader picture across our portfolio and to identify areas for continuous improvement. Each metric has been set with a longer vision in mind, such as steadily increasing our embodied- and source-carbon goals or incorporating passive survivability and "islanding" capabilities into our projects.

We view all six categories as interdependent and believe it is important to take a holistic approach when setting goals. The framework is designed to use strategic questions about projects early in the design process to generate new possibilities and influence project intentions, opportunities, and ideas. For example, use of the BNIM-developed Site Analysis Tool (ecology metric) led one project to identify environmental and infrastructure risks to the residents surrounding a new community center. The team used this understanding to develop strategies for off-grid islanding with renewable power and battery backup, which would enable this Lower Sioux Community Center to serve as a temporary shelter for residents displaced in the immediate aftermath of a disaster. Another project team using this tool identified that a large portion of the wooded and wetland periphery of its site serves as an ideal habitat for a native, critically endangered species of bat. This team is working to reinforce this habitat by incorporating strategies that house and encourage this species as part of the architecture and landscape design.

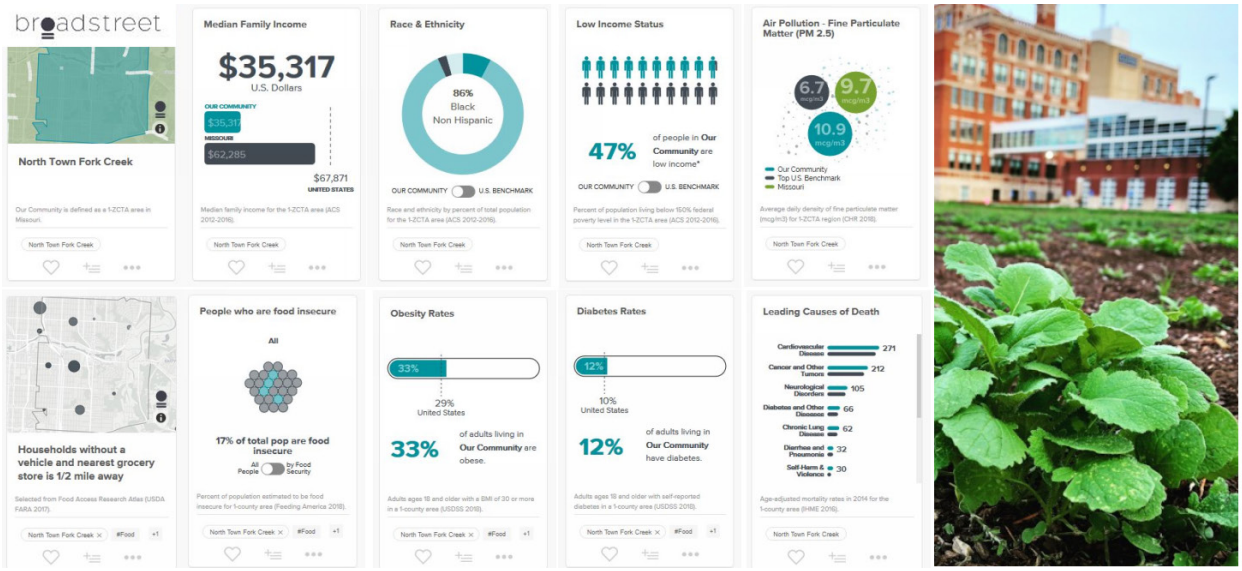
The framework is also meant to lead to more engaging conversations with clients and collaborators. For example, in a master planning proposal of a development project in a low-income neighborhood, the team went through a Community Health Assessment as part of the equity approach metrics. This is an indicator report that gathers data to understand how the social determinants of health (poverty, housing, access to education, food security) are shaping equity in a neighborhood or community. The team used a tool by BroadStreet to run the assessment and shared the data with the client. It identified interconnected health concerns including air pollution, food insecurity, obesity, diabetes and cardiovascular disease, and above-average cases of asthma. Conversations ensued to work with the community to identify strategies to help improve community health, such as urban farming, planting trees, creating a walkable development with amenities, and better transit connections.

"We believe that fostering connections and networks enables the agency of architecture to be more than a collection of buildings with certifications."

The framework is also intended to streamline efforts to analyze and provide useful information to clients and collaborators. For example, within a matter of 30 minutes, teams can benchmark


ENERGY
WATER
ECOLOGY
WELLNESS
EQUITY
RESOURCES
STOCK EFFECT
RENEWABLES
NATURAL VENTILATION
LIVING MACHINES
GREY WATER
RAIN WATER REUSE
POTABLE WATER MAN.
STORM WATER MAINT.
WILD LIFE HABITATS
WATERSHED/WATER
SITE CONTEXT
REGIONAL ECOSYSTEM
LANDSCAPE
BIODIVERSITY
AIR QUALITY
MENTAL HEALTH
ROOM AIR QUALITY
ENHANCED
MATERIAL HEALTH
BIOPHILIC DESIGN
BEAUTY
COMFORT
DAYLIGHTING
QUALITY VIEWS
OPERABLE WINDOWS
ALT. TRANSPORTATION
HISTORY/CULTURE
CONNECTIVITY
SOCIAL JUSTICE
WALKABILITY
UNIVERSAL DESIGN
COMMUNITY ENGAGEMENT
ECONOMY
WASTE REDUCTION
RESILIENCY
REGIONAL MATERIALS
MATERIAL TRANSPARENCY
LIFE CYCLE ANALYSIS
LONG LIFE, LOOSE FIT
EMBODIED CARBON
SEASONAL SHADING
PASSIVE STRATEGIES
BUILDING ORIENTATION
ACTIVE SYSTEMS
THERMAL MASS
SHADING


ENERGY
WATER
ECOLOGY
WELLNESS
EQUITY
RESOURCES


broadstreet
North Town Fork Creek
Median Family Income
$35,317
U.S. Dollars
$62,285
$67,871
Race & Ethnicity
86%
Black
Non Hispanic
Low Income Status
47%
of people in Our Community are low income*
Air Pollution - Fine Particulate Matter (PM 2.5)
6.7
9.7
10.9
Households without a vehicle and nearest grocery store is 1/2 mile away
People who are food insecure
17% of total pop are food insecure
Obesity Rates
33%
29%
United States
33%
of adults living in Our Community are obese.
Diabetes Rates
12%
10%
United States
12%
of adults living in Our Community have diabetes.
Leading Causes of Death
Cardiovascular Disease 271
Cancer and Other Tumors 212
Neurological Disorders 105
Diabetes and Other Diseases 66
Chronic Lung Disease 62
Diarrhea and Pneumonia 32
Self-Harm & Violence 30

their pEUI and calculate solar potential by using the prescribed tools: COTE Super Spreadsheet, Zero Tool, and PV Watts calculator. With this information, we can quickly calculate ROI to make a compelling case for solar with our clients.

Education

Education was an essential aspect of the Action Plan. We wanted to ensure all design staff had the baseline knowledge to feel empowered to engage their clients and collaborators on these topics. To provide additional support to project teams, we have a sustainability group, which is composed of one designer from every studio across our three offices. These individuals act as "connectors" for specialized knowledge, tools, and resources for studio members.

As part of the plan's educational agenda, each month, we focused on one of the six categories. We held an all-staff lunch education session, which focused on category approach metrics, tools, and resources presented by our sustainability group. Education throughout the month was supplemented by vendor lunches, tours outside of the office, software training and presentations by special guests. For example, during Energy Month, we had a special guest present on the ASHRAE modeling standard and hosted software training for Sefaira and PlanIt Impact for interested staff.

To reinforce the framework content and provide a visual reminder, we curated the screen savers on our public monitors with approach metrics, project examples, emerging issues, and questions for engagement, such as, "Could your project encourage ecological restoration?" or, during Equity Month, "Who might be under-represented or missing from the decision-making process?" We also posted articles or information about the topic to our office intranet to further bring attention to issues and provoke investigation.

Advocacy

Tracking metrics is only one aspect of our Action Plan. We know that focusing only on our projects will not be enough to draw down carbon to meet the demands recognized in the 2018 IPCC U.N. report, nor will it be enough to address social-justice issues our communities are facing. As architects, we see advocacy as an extension of our practice and take an active role in our communities by working with organizations to lobby for change. To name a few examples, we have recently been active in advocating for more energy-efficient building codes locally and nationally. We are assisting Climate Action KC, a coalition of bipartisan elected officials from Missouri and Kansas to develop a regional carbon emissions inventory, climate risk analysis, and climate action plan. Additionally, we have been involved in developing affordable-housing policy to address issues of equity, health, and wellness.

We believe that fostering connections and networks enables the agency of architecture to be more than a collection of buildings with certifications. For example, our design team for the West Bottoms Flats, an adaptive-reuse multi-family housing project, advocated for green infrastructure surrounding the site. The team worked with the Kansas City, Mo., Water Services Department and our client to develop a demonstration project for the city. This public-private partnership will be a way for the city to study natural techniques to reduce sewer backups and overflows in the area to protect the environment. The project is transforming the impervious alleys and courtyards of the historic West Bottoms district into a series of public spaces that capture, store, and infiltrate stormwater from the surrounding building roofs and hardscape. We believe this advocacy is vital to achieving our core mission of delivering beautiful, integrated living environments that inspire change and enhance the human condition.

Moving Forward

Our first annual sustainability report will be released in April. This report will share our project approach metrics from 2019, along with comparative data between years and (where possible) data relative to the rest of the industry. The report will include project highlights, call out exemplary solutions and strategies across the firm's work, and identify areas for improvement and focus in the following year of effort. It is intended to be an internal tool for learning and improvement and an external resource to share our progress and lessons learned with our industry peers.

BNIM attained ARCHITECT 50's top rankings at the end our firm's 49th year of practice. It is a great honor to be recognized as the No. 1 firm for Sustainability and No. 2 for Design and Overall. However, we also know that our work here is not yet done. The bar is set high for us — as a firm and as an industry — and we are ready to launch our next 50 years with a focused commitment to solve the biggest challenge our human society has ever faced. For us, it's the perfect launching pad for what's next.

BNIM's sustainability group includes Joyce Raybuck, Jeremy Knoll, Ryan McCabe, Jeremy Nelson, Katie Nichols, Dana Sorenson, and Adam Wiechman.

Top: Sustainability action plan metrics according to bnim's six identified categories.
Middle: Lower Sioux Community Center, rendering.
Bottom: Community Health Assessment with BroadStreet

Joyce Raybuck, AIA, LEED AP
Raybuck is a Project Architect and Studio Director at BNIM in Kansas City. A graduate of The Pennsylvania State University, she has over 15 years of professional experience in design and sustainability.

Pittsburgh equity in architecture report

Data about the architecture profession is readily available but can leave you wondering whether it accurately reflects your situation or community. For years, I have reviewed the AIA Compensation Report and the Equity by Design survey, among others. I was able to hear Rosa Sheng (one of the thought leaders behind Equity by Design) speak about it at the AIA Women's Leadership Summit in 2017. The data was enlightening, but I always wondered how it directly relates to architects in my region, centered in Pittsburgh, Pennsylvania. The data available for our city is rather small, and there are typically holes in the data gathered in the AIA Compensation Report when you look closely. For instance, in the 2019 AIA Compensation Report for Pittsburgh, there is no data for positions "Architectural Staff Level 2" and "Project Manager." This leaves no information for people in the area who match those job titles. What these holes also mean is that people of that level chose not to participate in the survey.

In 2019, I came across the Girl Uninterrupted Project. It took the initiative to complement the Equity by Design reports and focused its research on five major metropolitan areas: Boston, Chicago, New York, Los Angeles, and Washington, D.C. I highly recommend looking at the interactive results tool to see what information was gathered. (http://visualizations.sasaki.com/girluninterruptedproject/) After seeing this project, the information they were able to gather, and the tool they created, I was inspired to take action for my city. I have a blog, mentorArchitect.com, and I thought, why not use it to gather information about professionals in this city and provide the information to our community? And that's how it all began.

The Launch

The goal of this study is to shed light on what is happening in the architectural community for the Pittsburgh region. In addition to looking at compensation, it includes demographics, equity, culture, and licensure. This survey was inspired by the AIA Compensation Report (2017 and 2019), Equity by Design (2018 survey), and Girl Uninterrupted Project (2019). It was solely provided and analyzed by me, as the owner of mentorArchitect.com. Because of limited resources and time to analyze such a report, it does not have the level of detail of the Equity by Design reports or an interactive data visualization tool as seen in the Girl Uninterrupted Project.

The survey was launched through the "Pittsburgh Community Survey Launch" blog post on Oct. 18, 2019. This post was distributed via email, LinkedIn, mentorArchitect Facebook group, YAF Pittsburgh Facebook group, Women+ In Design Pittsburgh Facebook group, YAF Pittsburgh Newsletter, Women+ In Design Newsletter, and a table at the NOMA Equity Panel Discussion at GBBN's Pittsburgh office. I want to thank everyone who helped spread the word to others in the community. I have found that without the help of those spreading the word to their organizations and offices, it would not have had the high level of participation it did. After being live for four weeks, the survey closed Nov. 15 at midnight with 160 participants.

The Purpose

The results are intended not only to help individuals, but also firms, to see where they stand. The survey also compares these results with the numbers provided in the 2019 AIA Compensation Report for Pittsburgh, for general reference. A career in architecture, for most, is not about the money. It is a career of passion and drive to help the world around us. It is important to educate young professionals on the value of other benefits like insurance, time off, hours worked, licensure, etc. The focus should be on the whole package. What is most valuable to you? How do your values change at different stages of your life?

I put the direct-compensation numbers toward the end of the survey in hopes that everyone does review all these other statistics. I encourage you to look at the report regardless of where you are from or your background. How do you feel these findings compare to your community? Is there an opportunity to start a discussion within your firm about equity, values, goals, benefits, compensation, etc.? I hope others gain the confidence to make a difference in their communities and to have discussions like this.

Right: Registered Architects Compensation Breakdown, page 37 of Pittsburgh Equity in Archtiecture Report.

Some Interesting Findings

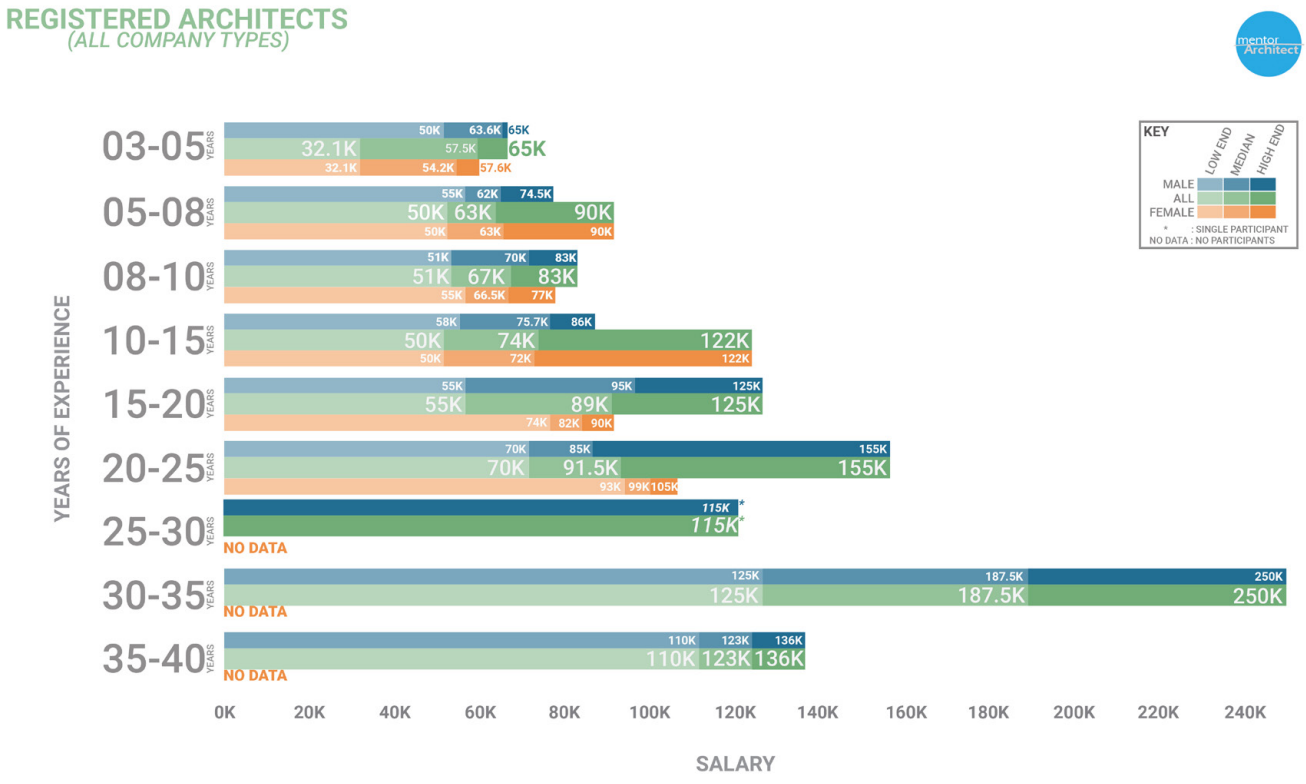
There were some eye-opening findings that are worth taking more time to understand. In the Pittsburgh Equity in Architecture Report (pages 36-37), the base salary of registered architects is organized according to years of experience. This takes out the variable of job title, which can entail different responsibilities from firm to firm. Based on information gathered on architects ranging from five to 20 years of experience, the lower end of the salary range shows a difference in salary of only $5,000. Meanwhile, the upper quartile for those same years of experience has a range of $42,000.

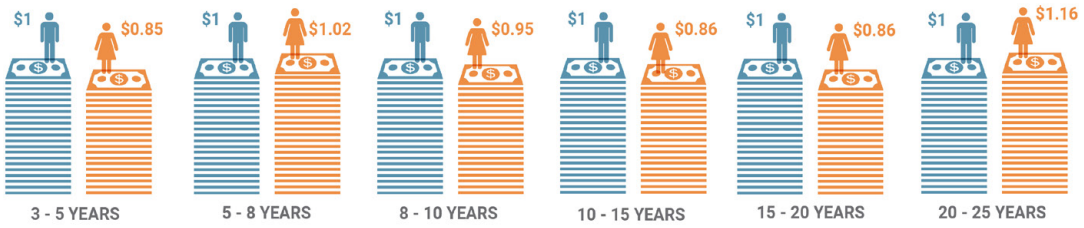
There are several factors that determine what your exact compensation is and if you are in a leadership position for your firm. As you grow in the profession, it is not surprising that the actual pay range gets larger compared with that of new graduates because of different experiences, responsibilities, and firm ownership. Another factor to consider was the impact that the last recession had on the architectural community compared to more recent years, when most firms have been busy with work. Regardless of the reasoning, just reviewing the numbers, it is surprising that the whole range bracket did not increase for the more experienced professionals.

Parental Leave

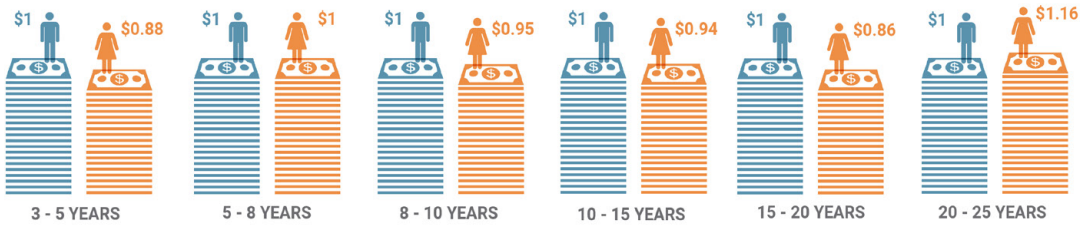
Parental leave was also reviewed as part of the survey. It has become a hot topic in recent years, and the Equity by Design reports dive into detail about why parenting leads some women to leave the profession or take time off. The Women at Work podcast by the Harvard Business Review has an episode devoted to parental leave, discussing the Bill Gates Foundation and how it offers men and women up to 52 weeks of fully paid parental leave. Companies often provide parental leave only for women, which my survey suggests is also true for architecture firms in my region. But based on the written responses in my survey, men equally want the opportunity to help care for their families. Company benefits often still reflect the old societal norm of women taking care of the household.

I surveyed some of the young parents I knew to figure out how much they are paying for day care for one child. (Granted, most had more than one child in day care.) Based on my compensation data and day care cost interviews, for a professional with less than three years of experience, day care costs take up 25.3 percent of their annual salary. Is a change in your firm's parental leave policy an option? If you are a firm owner, is there an option to provide additional benefits to help cover the costs of day care for parents?

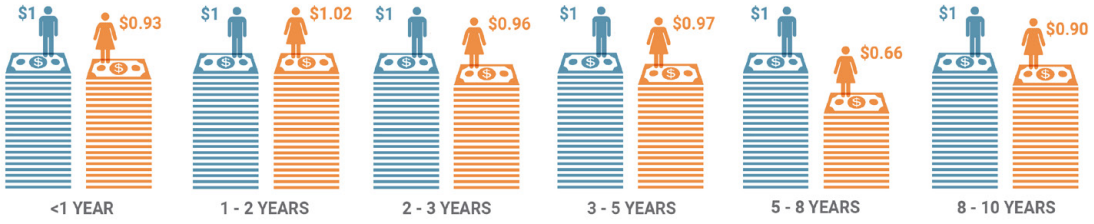




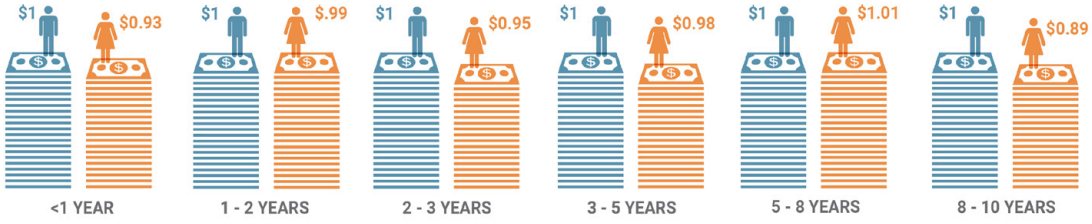
MEDIAN GENDER GAP
REGISTERED ARCHITECTS (ALL COMPANY TYPES)



MEDIAN GENDER GAP
REGISTERED ARCHITECTS (A AND A/E FIRMS ONLY)



MEDIAN GENDER GAP
NON-REGISTERED STAFF (ONLY THOSE ELIGIBLE TO BE A REGISTERED ARCHITECT)



MEDIAN GENDER GAP
NON-REGISTERED STAFF (A AND A/E FIRMS ONLY)

Pay Equity

The results also looked at pay equity based on registration and years of experience. The Equity in Design report highlights the missing 32 percent (http://eqxdesign.com/missing32), the women who leave the profession at certain levels of their careers. This allows leadership roles in the architectural community to remain primarily with men, while the younger generation has a gender split around 50/50. I highly recommend looking at the full report.

Based on the Pittsburgh survey, there is a pay difference between genders for registered architects. However, where the disparity really became apparent is for those who identified themselves as non-registered staff. (To the left is an image of the median gender gap of registered and non-registered professionals for the Pittsburgh region.) As non-registered staff gain more experience, the gender gap widens greatly in some situations. For registered Architects, there is still a gender gap to discuss, but it is minimal. I would need more registered architects as participants to understand how wide or narrow the gap is.

Importance of Surveys

Surveys like these are important for providing insight to the AEC community, but the value depends highly on the number of participants. Julie Brown Business Development explains in a webinar collaboration regarding Confidence and Visibility that the statistics show that only 11 percent of emails are read. Based on that statistic, if a survey is distributed once or even a few times through email, it is unlikely to draw a sufficient number of participants. I was reaching out to people in the region daily and asking those who took the survey to remind their colleagues about it. I believe this continual contact, through different forms of communication, led to success in the number of participants.

Low participation leads to gaps in survey results and not enough information to analyze. The next time a survey comes across your email, take it right away, or put a reminder on your calendar for when you do have a few moments. Talk about the survey with your colleagues. SHARE the survey in a variety of ways, like email, social media, etc. Only when our profession values the importance of these surveys and understands that taking a few minutes out of the day won't derail a project will we be able to truly gain knowledge and information about where we stand.

I hope this survey and its results are inspiration for you to have discussions in your regions and firms regarding pay, equity, family life, and work culture. Change doesn't happen in a day, but it does take a first step to get started..

Opposite: Median gnder gap of registered and non-registered professionals in the Pittsburgh region.
Above: Graphic depicting cost of daycare as average salary percent.

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

Healthy space:

Walking the talk for healthy indoor air quality

DLR Group's design culture encourages and expects every employee-owner to use their design voice in creative and innovative ways. It encourages exploration of ideas in two specific ways. First is the Personal Development Grant program (PDG), which awards up to $5,000 and 80 hours of time to individuals to fund a project and exploration of knowledge to strengthen their personal and professional life. Second is our Research & Development Grant program, which focuses on technology, process improvement, and evidence-based design through primary and secondary research.

As a firm, we recognize that in-house research benefits not only our employee-owners, but our clients. Selected research proposals must foster the development and exchange of diverse and challenging ideas about architecture, engineering, planning, and interior design. Our R&D program contributes meaningful perspectives to design culture, the built environment, and greater society.

One such R&D grant program originated with a PDG grant and individual research that has developed into what we call our *Healthy Space* initiative. If we expect and encourage our clients to invest in the healthiest spaces for their workplaces, we need to lead the way in that commitment. Our internal program captures real indoor air quality (IAQ) data points to quantify the healthiness of the air we breathe and qualify how we think about workplace productivity.

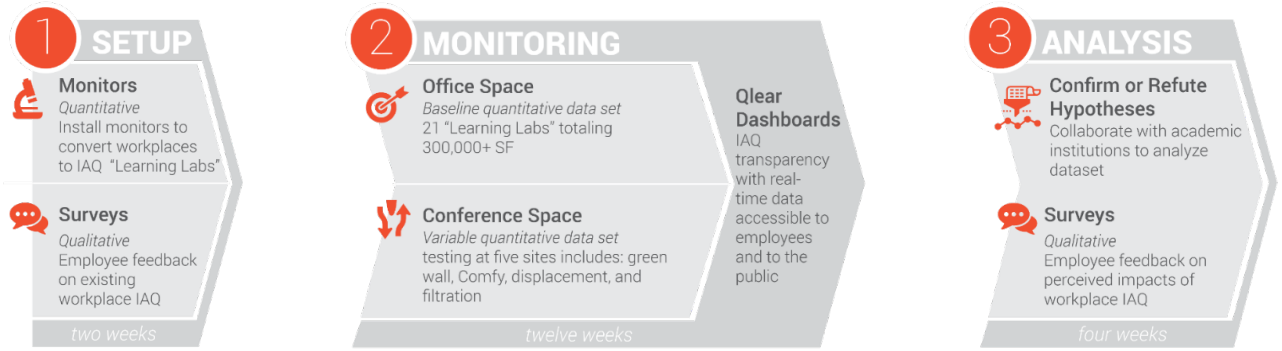
Now in all our offices, *Healthy Space* IAQ monitoring equipment tracks temperature, relative humidity, CO_2, PM2.5 (an atmospheric particulate with a diameter less than 2.5 micrometers), and TVOCs (a range of organic chemical compounds) in real time.

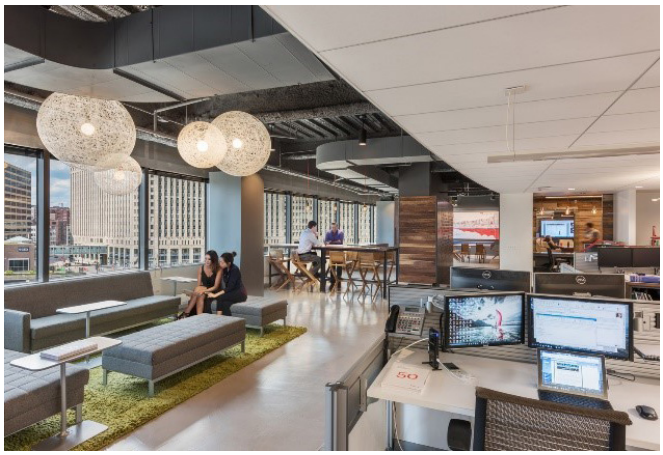
Why focus on Indoor Air Quality?

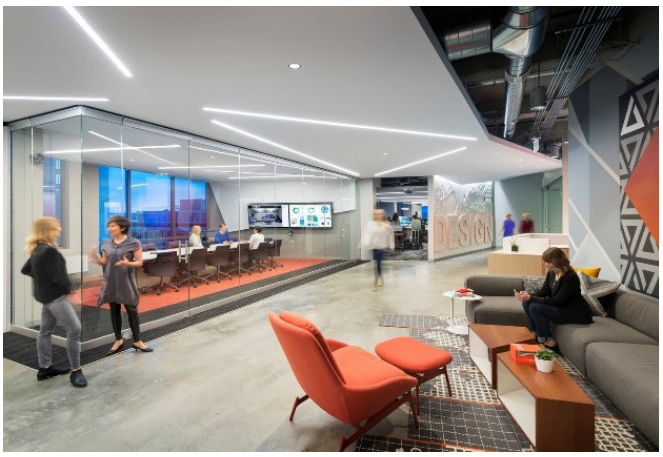
Of the four factors influencing indoor environmental quality (air quality, thermal comfort, visual comfort, acoustical satisfaction), current research is indicating that air quality has the biggest impact on cognitive function. Second, because most studies related to IAQ were lab-based with a small square footage and number of occupants, we determined that IAQ in the office setting was an unexplored area. We identified those gaps and opportunities for workplace study, and our hypotheses aimed to address how our design impacts IAQ.

Nearly all commercial buildings track temperature to control the HVAC system, and more advanced energy codes require lighting and HVAC controls to modulate daylight and CO_2, respectively. However, few existing — and even new — buildings are measuring beyond CO_2 to assess IAQ. *Healthy Space* gathered and leveraged existing research in IAQ and took inspiration from RESET standards on how to set up our study design, particularly concerning sensor deployment. These findings are leading to further insights into occupant, operational, and location-based IAQ issues.

Our *Healthy Space* research closes that gap by measuring particulate matter and VOCs, along with baseline metrics of temperature, humidity, and CO_2. We also analyze specific IAQ optimization strategies such as green walls, air delivery, and distribution methodologies against the IAQ metrics listed above and occupant satisfaction. This informs a feedback loop for our interior design best practices and HVAC design and operation.







The Process

Image 1 identifies how we managed our research. We did extensive research on IAQ monitors and tested them in our master planning process before deploying monitors firm- wide, following the RESET sensor setup requirements. Chicago became the first DLR Group office to meet RESET standards as a result of this program.

Our data was compared with qualitative employee feedback on existing IAQ. Following this pilot program in Chicago, the same monitors were shipped to and installed in 25 DLR Group offices.

Data Sharing for Transparency

All live data is fed directly to QLEAR, a cloud-based dashboard, which can be accessed by every employee on their desktop, allowing them to view any office's IAQ in real time. This has been a useful tool, especially during natural events such as forest fires in areas close to our offices where we can see spikes in poor air quality. This has allowed us to proactively take steps to adjust air filters or HVAC operation or use of non-VOC cleaning products and see immediate results in improved air quality even during city-wide environmental events.

An unintended positive outcome of sharing the data with all employee- owners was the dialogue it created on our intranet. #HealthySpace started to trend from employees sharing insights gained through the data.

The data is also shared with researchers and graduate students at partner universities. Iowa State University School of Mechanical Engineering is conducting research in post-graduate-level studies. And Harvard University's Center for Climate Health and the Global Environment is using our data in its Global Buildings Study and Cognitive Effects (CogFx) study. Our involvement with these research programs and our transparency in sharing our data have led other organizations and agencies to ask us to do similar studies in their buildings, including a *Healthy Strategies* pilot program for the General Services Administration, and similar analysis completed for Chicago's Merchandise Mart.

Ultimate Goals

Our primary design goal was to elevate the human experience for building occupants through IAQ transparency. Our own program is showing that sharing this data alone can increase occupants' positive perception of environments they cannot fully control. As a result of our *Healthy Space* study, the majority of DLR Group's 30 offices are now RESET certified, a performance-based building standard recognizing measurably healthy results for PM2.5, CO_2, and TVOC levels in indoor spaces. Our goal is for all our offices to meet the RESET IAQ standard, which would make us the first company in the world to certify all of its permanent offices.

This is a positive step for DLR Group and our employee-owners, and we extrapolate what we learn for the benefit of our clients. Bottom line is that planning, architecture, engineering, and interiors all play a role in changing our environments for the better. But we must be willing to do the work in our own workplaces and transparently communicate the importance of these sustainable initiatives to our employees, our clients, and our industry.

Opposite: Image 1, how research was managed.
Top Left: DLR Group Chicago Offices
Top Right: DLR Group Denver Offices

Michael Vander Ploeg, AIA
Michael is an architect at DLR Group working out of the Seattle office. His Personal Development Grant on "data streams" merged into firm-wide Research + Development grant on Healthy Spaces.

Shona O'Dea, BEMP
Shona is a Building Performance Analyst for DLR Group in Chicago. She envisions a redefinition of sustainable design to a data-driven, scientific-centric process where building performance is always verifiable.

What does resiliency mean in the Midwest?

“Sometimes, when we are living in a region without the severe impacts of events such as earthquakes and hurricanes, our stressors fly under the radar. That doesn’t mean that they’re not worth acknowledging and that we shouldn’t strive to mitigate them.”

The Midwest — a place devoid of hurricanes and earthquakes, flyover country.

Resiliency has become one of the latest buzz words within the sustainable design community. It is commonly used in reference to areas prone to some of the most destructive natural disasters. Typically what comes to mind are hurricanes and tropical storms (think New Orleans), but the term “resiliency” also encompasses accelerated changes due to climate change.

As someone who is through and through a Midwesterner, it raises the question: What does resiliency mean for the Midwest? The region is devoid of mountains and oceans, which means it’s also devoid of the catastrophic disasters that come with them. At first glance, our biggest natural disasters might seem to be tornadoes.

But before we explore what factors affect the Midwest’s ability to mitigate and adapt to adverse conditions, let’s first get to what resiliency means in the design community. The Resilient Design Institute defines it as “the intentional design of buildings, landscapes, communities, and regions in order to respond to natural and man-made disasters and disturbances — as well as long-term changes resulting from climate change. Resilience is the capacity to adapt to changing conditions and to maintain or regain functionality and vitality in the face of stress or disturbance.”

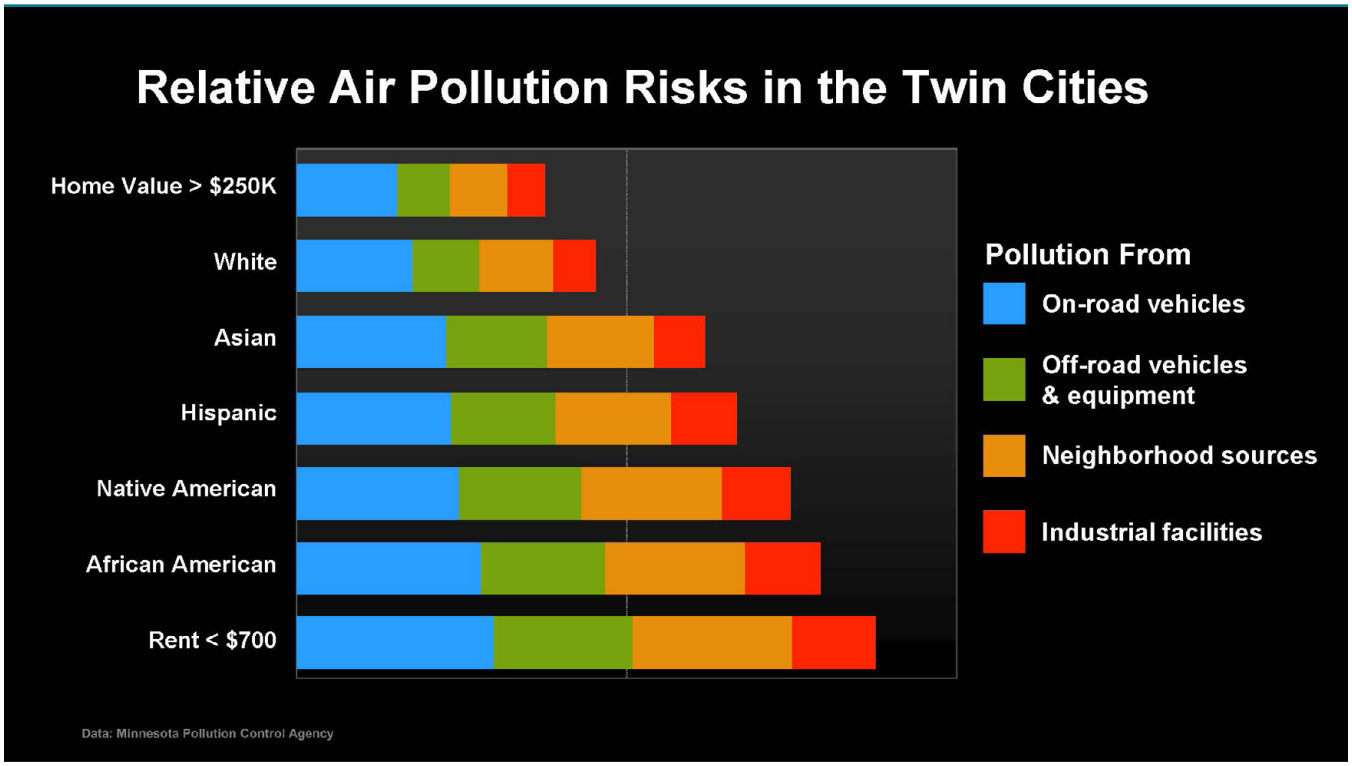
So, what man-made and natural disasters affect the Midwest? Tornadoes just barely make the list. There are more pressing concerns, and it turns out that the region faces many underlying chronic stressors that climate change will exacerbate.

To the right are some of the most critical shocks and stressors.

Minneapolis Climate Reality presentation by Al Gore

Midwestern Shocks and Stresses

Midwest Region (according to the U.S. Climate Resilience Toolkit)	**Minneapolis** – **Urban Example** (according to 100 Resilient Cities)
Agriculture Increased frequency and severity of rain events lead to increased runoff, soil erosion, and conditions for pests and pathogens	**Economic Inequality** Only 36% of black students graduate from high school in four years
Biodiversity and Ecosystems The Great Lakes, the largest freshwater area, experiences water quality problems from the runoff of rain events Species have already been moving geographically because of climate shifts. Growth rates have been affected. These changes can't keep up with the fast-paced climate changes.	**Extreme Heat** Heat affects vulnerable populations the most. This is already occurring and is expected to become more frequent and more severe.
Human Health Increased frequency and intensity of poor air quality days Extreme high-temperature events Extended pollen seasons Modifying the distribution of disease-carrying pests and insects	**Hazardous Materials Accident** There are regular shipments of crude oil and ethanol that go through residential neighborhoods and near the Mississippi River. Minneapolis is one of the busiest hubs in the U.S.
Transportation and Infrastructure Rainfall events lead to destruction of stormwater management systems and infrastructure Floods are causing damage to property Floods disrupt transportation (roadway closures, erosion of bridges, more accidents)	**Lack of Affordable Housing** There is a shortage of vacant units in Minneapolis, which drives up the cost of living
Community Vulnerability and Adaptation At-risk communities in the Midwest are becoming more vulnerable to climate change impacts. Tribal nations are especially vulnerable because of their reliance on threatened natural resources for their culture, subsistence, and economic needs.	**Infrastructure** Stormwater capacities are not sized to accommodate the current rainfall patterns that the city experiences
Reliance on coal The Midwest is a major consumer of coal. In 2015, coal still provided more than half of the region's energy.	**Lack of Social Cohesion** Vulnerable populations are most impacted by stressors. When an event happens, there is a lack of resources to recover and repair their lives.



Minneapolis Climate Reality presentation by Al Gore

A central theme is that the Midwestern climate is becoming wetter, warmer, and more humid. The effects are felt in the vast agricultural areas and the urban centers. Because infrastructure lacks capacity in cities and in rural areas, increased runoff literally goes downstream and harms the water quality and the health of other ecosystems.

If there's anything I've learned in architecture, it's that a single decision has 10 unexpected downstream impacts. Similarly, not one of the events above ever occurs in isolation. The pre-existing stressors in the Midwest are exacerbated by climate change, creating more negative consequences at a rate that adaptation can't keep up with.

Sometimes, when we are living in a region without the severe impacts of events such as earthquakes and hurricanes, our stressors fly under the radar. That doesn't mean that they're not worth acknowledging and that we shouldn't strive to mitigate them.

RESOURCES TO EXPLORE TO LEARN MORE:

1. The Climate Reality Project. Climate Reality Training Corps. Minneapolis, Minn. Aug. 19, 2019.

2. Kintisch, Eli. "Mother Earth Has a Fever" Need to know on PBS. 2010, April 26.

3. Explore the issues that cities around the world face when it comes to resiliency, including Chicago. http://www.100resilientcities.org/cities/

4. Explore the specific issues that the Midwest faces when it comes to resiliency. https://toolkit.climate.gov/regions/midwest

Bridget Geissler
Bridget Geissler is an Architect with Elness Swenson Graham Architecture and Design. Her role on urban hospitality and multifamily projects includes coordination of project teams and building systems. Bridget seeks integration, weaving together her interests in architecture, engineering, and sustainability.

Transparency in use

Proving materials intentionality in the built environment

Let's frame transparency in use through a familiar scenario: menus at restaurants. Starting with the wine list, what helps guide your selection? Are you told where your options are sourced from? Is cost per bottle/glass listed? Is the sustainability of production included? Transparency of production is provided to help inform your decision.

However, when you flip to the food options, are you greeted with the same transparency in selection criteria? While some restaurants are starting to increase the transparency of where food is sourced, the standard practice is to not list that information. Does the opportunity to know matter? Should the opportunity to know matter?

Transparency is here to stay

Globally, society has developed an appetite for transparency. The demand for transparency is coupled with third party verification or credible proof. To trust information, it's important that it's confirmed by a trustworthy source. Lately, I've been thinking about the range of transparency available, when it is readily advertised, when it exists but must be requested, and when it does not exist and must be encouraged.

AEC industry professionals experience a similar range in transparency with building products, but we rarely start with a validated menu. Actually, we rarely start with a menu at all. Much of the whimsy in the design process involves partnering with manufacturers and finding new products, making a pre-selected menu less than appealing. Our menu also becomes tricky as certifications available for building products begin to document ingredient analysis or the value chain emissions. Certifications tying both ingredients and greenhouse gas emissions together, further reporting on hand printing — or the good achieved beyond the product — and organizational transparency are also available. Ideally, our menu would have many sections for comparison, each with a similar layer of complexity.

Some categories of products have met the demand much earlier than others. Take carpet, one of the highest-achieving Construction Specifications Institute (CSI) divisions when it comes to transparency. Varying levels of transparency exist within carpet products. Some manufacturers readily advertise validated achievement, while others must be pushed to secure documentation or start the journey toward certification altogether. Designers must now source materials knowingly, across the entirety of the materials in a project. Transparency is vital to proving why decisions are made. Daunting? It certainly can be. Exciting? Absolutely!

Once you've engaged transparency, it's time to consider optimization

Receiving a certification for a product can be something to celebrate. On a wine menu, "sustainably sourced" and "certified organic" have very different achievement criteria. If

Through DLR Group's internal Artist Lecture Series - natural pigment forager, Heidi Gustafson, spoke to addressing place-specificity, color, and landscape discovery.

your team set out to collect several products with one specific certification type, you can start to become extremely familiar with the certification content. After seeing so many similar certifications, the urge to understand what sets them apart may start to set in. That is the tipping point. Own that urge to know!

You can make giant leaps in literacy by digging into the contents of a document. Ultimately, optimization of a product entails decoding a certification's content and comparing it to similar products to make an informed decision. Optimization happens by reading the documents directly or using a few comparison tools listed in a tasting menu detailed at the end of this article.

Visibility through tracking: mood, contract documents, construction, celebration, and sharing

The best way to bring others into your process is to leave traces that allow folks to follow along. In the case of a dining venue, users can create collaborative Google maps with vetted restaurants to share with others. Mapping your visit means tracking in a live, visible way. Likewise, tracking materials research through installation should also be visible to the design team, the client, the contractor partner, and future teams.

"The best way to bring others into your process is to leave traces that allow folks to follow along...tracking materials research through installation should also be visible to the design team, the client, the contractor partner, and future teams."

Because of the divide in what certifications represent, many design firms, including DLR Group, split evaluation into two camps: environmental impact and ingredient health. Project teams can track materials using collaborative tools like Google sheets or Excel documents. For projects pursuing the Living Building Challenge (LBC), DLR Group uses platforms like Red2Green to indicate vetting and specification status. However, we're not restricting tracking to certified materials. It's important to track certified and non-certified products.

Using make-shift 3D printed clamps, DLR Group tests pre-validated PVC-free shade cloth options. Photo by DLR Group.

Understanding the variance between certified and non-certified helps designers determine what can be easily sourced by contracting partners and what requires more coordination for future projects. Tracking to this level takes about as much time as microwaving your lunch. Tiny updates, over the life of a project, can go a long way.

Once a vetted material is installed, a celebration for the client, the design team, and the manufacturing community is in order. It can be expensive for manufacturers to meet our demand for transparency, so it's essential they know when their product is installed.

Recently, in an exercise for a large technology company, we set out with the goal of testing how attainable LBC-ready

materials are in the Seattle market. Ultimately, we found that 20 percent of the specific project's materials (by type) would hypothetically be compliant with the rigorous criteria of the LBC's Materials Petal. Because the team was tracking from initial mood through the submittal phase, we were able to fold in pricing feedback from our contracting partner. Having reliable pricing for 20 percent compliance helped us understand what CSI divisions have little to no cost premium. Tracking installation status enables the team to reach out to the manufacturers specified and celebrate the success.

Intentional tracking can affect design in the future. In 2016, the AIA discovered that 57 percent of architecture firms reuse pieces of specifications from project to project; an additional 17 percent reuse entire specifications. Only 26 percent of architects reported writing specifications from scratch.[1] The industry continues to balance traditional production methods with automation in an effort to change the business-as-usual mindset. Tracking materials across the life of a project is one way to ensure the practice of "using what we used last time" starts with vetted selections or exposes an opportunity to collect new certifications.

Fortunately, materials transparency has an open-source culture. Firms are eager to collectively encourage products to certify, and reward those products which have met the demand. From Instagram to published databases to educating building users about the level of intention behind the composition of their space, sharing must go beyond those composing the drawings. Getting materials into the daily scroll on your feed is another means of jumping those business-as-usual hurdles.

Being greeted with more information than anticipated can sometimes be taken for granted. Whether we notice and acknowledge transparency, much less use it in our decision-making process, the materials we choose matter. Proving what we're using deserves the same rigor as design because it is design.

[1] B2B International. "The Architect Specification Journey: Understanding the Role of Building Product Manufacturers Today & Tomorrow," American Institute of Architects. 2016.

COURSE LINKS:

- AIAU Materials Matter series: https://aiau.aia.org/materials-matter-certificate-program
- Parsons Healthy Materials Lab: https://healthymaterialslab.org/education/e-learning-online-certificate-program
- Embodied Carbon primer: http://endeavourcentre.org/

VETTING PLATFORM LINKS:

- Declare product database: https://declare.living-future.org/
- mindfulMATERIALS: http://www.mindfulmaterials.com/
- HPD Repository: https://www.hpd-collaborative.org/hpd-public-repository/
- EC3: https://www.buildingtransparency.org/en/
- Red2Green: https://materiallybetter.com/

OTHER GUIDES / RESOURCES:

- The COTE® Top Ten Toolkit
- Living Building Challenge imperatives
- LEED MR and IEQ credits
- ARUP's "Prescription for Healthier Building Materials: A Design and Implementation Protocol"
- AIA's Materials Knowledge Working Group white paper on transparency & risk
- Toxnot PBC's "Product Transparency Playbook"
- Architecture 2030 Carbon Smart Materials Palette

Jill Maltby-Abbott, WELL AP
Maltby-Abbott is a Seattle-based designer who leads DLR Group's healthy materials initiatives and works in the firm's Workplace Studio designing innovative spaces for tech clients across the United States..

AIA Wisconsin practice innovation workshop

On Oct. 4, 2019, AIA Wisconsin hosted a fall workshop focused on Practice Innovation. The topic of the day explored the future of the profession, the practice of architecture, and the industry trends that affect us. Kicking off the day, local expert Chandra Miller Fienen, of StartingBlock Madison, shared how her company supports start-ups and entrepreneurship, how entrepreneurs' characteristics compare to those of architects, and how experience working with architects helps develop a space conducive to entrepreneurs. Tom Fisher of the Minnesota Design Center discussed the architectural industry's foresight, explaining the evolution of our practice, the economic trends happening around us, and the emerging concept of the "Sharing Economy."

With these new ideas in mind, the participants broke out into small workshop groups to explore and construct the ideal architectural practice or innovation for our profession's future. Facilitators assisted the groups in identifying strategic goals and services, as well as strategies for messaging and communicating services to a target audience. The day then culminated in "Shark Tank" style, with group pitches to a judging panel. Following the workshop, there was an optional tour of the Spark Building and the StartingBlock Madison offices, led by Miller Fienen and the designers from Eppstein Uhen Architects.

Entrepreneurs versus Architects

Miller Fienen shared her perspective on working with entrepreneurs and architects as the director of StartingBlock Madison. Although both may be creatives and optimists, the most striking difference lies in our views of failure. Entrepreneurs believe in Thomas Edison's axiom "I have not failed, I have just found 10,000 things that do not work" or John Maxwell's "Fail early, fail often, but always fail forward." Whereas the architect's reference is in building or structural failures, something to avoid. This has a real effect on the architect's ability to pursue practice innovation strategies.

The key to innovation is not only to understand the problem to solve, but also to have the foresight to think outside the box. As Henry Ford said, "If I asked people what they wanted, they would have said 'faster horses.' " Instead, he developed something they had never even considered. This analogy ties closely to the role of the architect and will be to our benefit as we approach our profession's future. Miller Fienen discussed three entrepreneurial companies having an effect on architecture right now: Arch Virtual, a virtual reality rendering firm; Curate, which uses Artificial Intelligence (AI) to identify and aggregate public information and records; and Build It Fab, which uses visualization scenes to sell its lighting. She also conveyed the importance of architects communicating according to their clients' preferred communication style.

The New Economy Flips the Old One on Its Head

The reality of the current practice of architecture is that its delivery methods are still based in the post-Industrial Revolution era. Tom Fisher detailed the shifts in our 21st-century life and economy that are affecting the role of the architect and what is designed and produced: environmental/sustainable practice needs; evolving work patterns that incorporate flexible schedules, remote/virtual officing, collaborative learning and workspaces; vehicle expense and new commuting patterns, Uber and AirBNB; 3D-printing production evolutions; Amazon delivery models; on-demand and subscription services, etc. These new patterns have contributed to Fisher's definition of the "Sharing Economy, an umbrella term for similarly emerging concepts that capitalize on new methods of interaction facilitated by centralized online platforms:"

- ***The Gig Economy*** — Connecting employers with contract-based roles (Freelancer & Udemy)
- ***On-Demand*** — Delivering a product or service through an online platform that matches expressed supply and demand in real time (Netflix & Spotify)
- ***Crowd Economy*** — Connecting participants to achieve the goal of mutual interest (Mechanical Turk & MyCrowd)
- ***Collaborative Consumption*** — Sharing, swapping, trading, or renting products and services (Thredup, Zipcar, & Helpling)
- ***Peer to Peer*** — Buying or selling assets or services in a decentralized economic model of peer-to-peer networks and platforms (EasyRoomate & Small Business Barter Exchange Services)
- ***Collaborative Economy*** — Unlocking the value of underused assets by matching needs through peer-to-peer networks (ParkFlyRent)

Practice Innovations

After the presentations, participants broke out into small groups to develop their own innovative practice models, brainstorming new ways to deliver services or perform work in the architectural profession. They selected topics/models that fit their interests: profit, process, product, or philanthropy. The following are some of the results of the brainstorming session:

Inte-Great! (Profit)
This team developed a subscription business model in which clients pay a monthly fee for facility "asset management" over the typical single-project delivery services. They could advise on a regular basis when maintenance projects or programming updates need to occur, monitor/evaluate system performance, and decide whether to remodel or build new. They believe they could provide better services because of the long-term knowledge base of the facilities and enhanced relationships. This idea was revered for developing better relationships between architect and client and offering more roles for the architect than just design.

A-Harmony (Process)
This team modeled its business after eharmony, but instead of matching couples, they proposed to connect the public to architects. They saw challenges for the public in finding compatible partnerships with architects, and this company would "take the mystery out of working with a design professional." They would set up an application and algorithm platform to create the matches and generate revenue through subscriptions by architects and advertisements. One reviewer thought this could give good exposure to different design problems.

Willow (Product)
This team identified communication as a major challenge in the architectural profession. Their business would develop an enhanced meeting software that would also track design decisions and approvals. Rather than searching through endless emails or meeting minutes, they envision a virtual, topic-based system that would branch together the timelines and decision-makers like a "willow tree." Reviewers thought this would be an extremely useful tool and would make design decisions much easier for clients.

DetailIT (Product)
This team brainstormed a subscription-based, smart, building-detail library. They see the challenges of the profession, with increasing retirees and younger staff, less experience, and requirements for faster production, all with fewer errors. Through a series of prompts and questions, it would auto-generate details to a CAD 2D or 3D format, which would allow adjustments by design professionals. Reviewers liked the idea of automation to save time for doing things that require their thought and energy.

Sharette (Philanthropy)
This team's mission was to develop a company that connects architectural volunteer opportunities with firms and design professionals, incentivizing volunteerism and enhancing the visibility of architects in their communities. They envision an online platform to encourage virtual collaboration and networking. Reviewers were impressed with their unique business name and believed it to be a plausible idea.

Above: Architects and design professionals advancing practice innovation at the AIA Wisconsin Fall Workshop (Photo Credit: AIA Wisconsin)

Looking to the Future
These events and exercises are so important as we consider the future of the profession. As architects, we need to be agile and resilient to keep up with the changing economy. The most important revelation of the day may have been that it is helpful to take a step out of the grind and commit to rethinking the profession's future and potential. We are so appreciative that AIA Wisconsin provides that opportunity.

This is a modified version of an article first published here by AIA Wisconsin.

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