

BIOPHILIC CITIES

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SPECIAL ISSUE *Creating Equitable Biophilic Cities*

THE NATUREFUL CITY *Working Towards a Just Urban Magic/ Tim Beatley*

FEATURE *Inclusive Healthy Places Framework / Jennifer Gardner*

PROJECT PROFILE *Reconciling Costa Rica's Cities / Federico J. Cartín-Arteaga*

PIONEER INTERVIEW *2018 AIA President Carl Elefante / Stella Tarnay*



The Biophilic Cities Journal is produced by Biophilic Cities, which partners with cities, scholars and advocates from across the globe with the aim of helping to build an understanding of the value and contribution of nature in cities to the lives of urban residents. As a central element of our work, the Biophilic Cities Network is a global collaboration of partner cities, organizations and individuals committed to working in concert to conserve and celebrate nature in all its forms and the many important ways in which cities and their inhabitants benefit from the biodiversity and wild urban spaces present in cities. Participation in the network acknowledges the importance of daily contact with nature as an element of a meaningful urban life, as well as the ethical responsibility that cities have to conserve global nature as shared habitat for non-human life and people.

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For more information on the Biophilic Cities, and to learn about ways to become involved in this global movement, please visit us at BiophilicCities.org.

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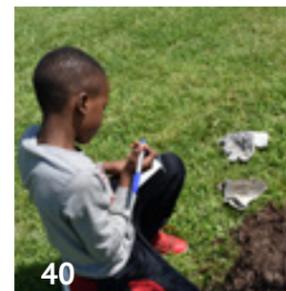
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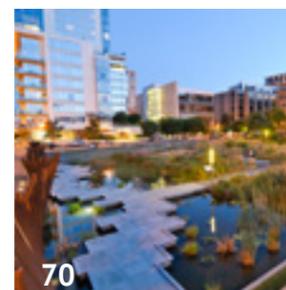
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Ontario Place (Trillium Park)
Photo Credit: [wyliepoon at Flickr](#)

The Natureful City: Working Towards a Just Urban Magic

By Tim Beatley

I am happy that there are ever more stories to tell of the magic of nature in cities. As we continue to build relationships with the cities in our Network, new cities that are considering joining, and grassroots groups pursuing their own biophilic agendas, we continue to learn about and document the magic and mystery they seek to uncover, protect and celebrate.

One of the highlights of a visit to Toronto (a city that we hope will be joining the Network soon) was a medicine walk with cultural botanist Diana Beresford-Kroeger who spoke of the magic of trees. Converging on [High Park](#), an enthusiastic group of around fifty of us listened closely and followed her as she guided us from tree to tree, telling us about their intimate biology, as if these trees were her own relatives (and she would likely say they are).

Forests have always evoked mystery for us but increasingly we understand the wonderful and unexpected ways in which they work together to survive and thrive. As we walked through the forest that day, Beresford-Kroeger spoke of the miraculous ways that trees “farm the sun,” and function like “molecular machines.” She told us that they are the source of sixty percent of the medicines we use. She made a compelling case for how we are more like trees than not. We are made of much of the same compounds and tissues, she tells us. We are so intricately interdependent. Beresford-Kroeger explained that the trees and the savanna ecosystem that we walked through that day tie us to our oceans and planet; explaining the essential role that tree leaves play in providing iron to marine microorganisms: “they’re the feeding foundation

for fish, all of the whales, and all of the creatures of the sea.” I don’t usually conjure an image of whales when I walk in the woods, but there is a lot to that forest that we did not understand before the walk.

We are living in remarkable times when there is so much new research showing the complexities and surprising social life of trees. Few sources of magic in the city are as readily available and watchable as trees. The attention received by German Forester Peter Wohlleben and his popular book, *The Hidden Life of Trees* (a book I have been assigning in my Nature + Cities class), has certainly helped to broaden our view of trees. A crop of younger forest ecologists, including [Annie Desrochers](#) of the University of Quebec and [Suzanne Simard](#) of the University of British Columbia, are also

adding much to our knowledge of these hidden lives. A group of European tree researchers has been using laser scanning to detect the overnight drooping of tree limbs and the [new understanding that trees actually “sleep.”](#) Trees were always mysterious but we are learning more as we listen and walk along with people like Beresford-Kroeger.

High Park is one of the last remaining places in Toronto where a Black Oak Savannah can be found. It is a place where the city undertakes prescribed burns each year to mimic natural fires that would have taken place on

the prairie. These are healing places, Beresford-Kroeger tells us, where miraculous biology is a daily occurrence.

Unfortunately, the magic of places like Toronto’s Black Oak Savanna is not equally or evenly enjoyed. There are profound and deep inequities in the distribution of nature in cities, and that is the special theme of this issue of the Biophilic Cities Journal, and indeed an essential part of the vision and movement of biophilic cities. The natural magic of our cities -- their forests and parks, the birds and living creatures that animate them -- are key to our health

and wellbeing. But access to that magic is variable and often unfairly distributed.

Many of the stories to follow will highlight the successes cities are having in committing to a just nature. The stories of Cully Park, in Portland, and Trillium Park in Toronto, are inspiring and show that it is possible to share power, to design inclusively, and to deeply engage underserved communities and neighborhoods of color. Both Trillium and Cully Parks show that it is possible, indeed essential, to connect to the deeper past, creating spaces and places together with the native peoples who were the



Diana Beresford-Kroeger
Photo Credit: Tim Beatley

the original owners and stewards of these lands, and in the process working to heal some of the loss and disjuncture that are so prevalent.

Biophilic Films

I experienced the magic of Cully Park as part of our continued

production of Biophilic Films. 2018 saw the release of our documentary film [Ocean Cities](#), screened at the Virginia Film Festival in November. This film is partially about the stories of magic in the marine environments around cities like New York and Baltimore and San Francisco. The film explores

both the dangers and delights of proximity to water: the desire to connect with water and all the mystery it holds, but also to adapt to and plan for the reality of sea level rise and coastal flooding, but ideally in ways that can actually make a city more biophilic.

We have produced several other [new short films](#), two that focus on birds (the Portland Catio Tour, and the celebration of Vaux's Swifts as they dramatically roost for the evening in the Chapman Elementary School chimney); one on an innovative park design (Portland's new Cully Park); and one about a wonderful biophilic school near Atlanta (Chattahoochee Hills Charter School). As well, we have produced a short film about the Smooth-Backed Otters of Singapore (the Bishan otters have attained world celebrity status) and one about Pier Into the Night, a wonderfully creative program that projects and narrates images of underwater nature in real time put on by the nonprofit [Harbor WildWatch](#), in Gig Harbor, Washington. Lastly, our short film about Rewilding New York Harbor shows the political power of joining together around a common urban vision to rebuild the once vast oyster reefs that protected the city as, MacArthur Genius Grant winner Kate Orff describes, "Living Breakwaters." Roland Lewis from the NYC-based [Waterfront Alliance](#), now a coalition of more than 1000 organizations, speaks in the film about reconnecting New Yorkers to the watery realms around them, turning the face of the city back towards the marine nature at the center of this urban estuary.

We believe these short films are an effective way to tell the stories of the remarkable work underway in cities, helping to bring these people, places and stories to life. These video

vignettes demonstrate the variety of impressive work underway in cities and the extent to which creative design and planning can make a difference, as well as the incredible sense of magic that the discovery and celebration of local nature can imbue into our daily lives. If you have not viewed them please take a few minutes to watch.

Gaining Traction

There is considerable evidence of how the vision of Biophilic Cities continues to gain impressive



Pier into the Night Gig Harbor, WA
Photo Credit: Tim Beatley

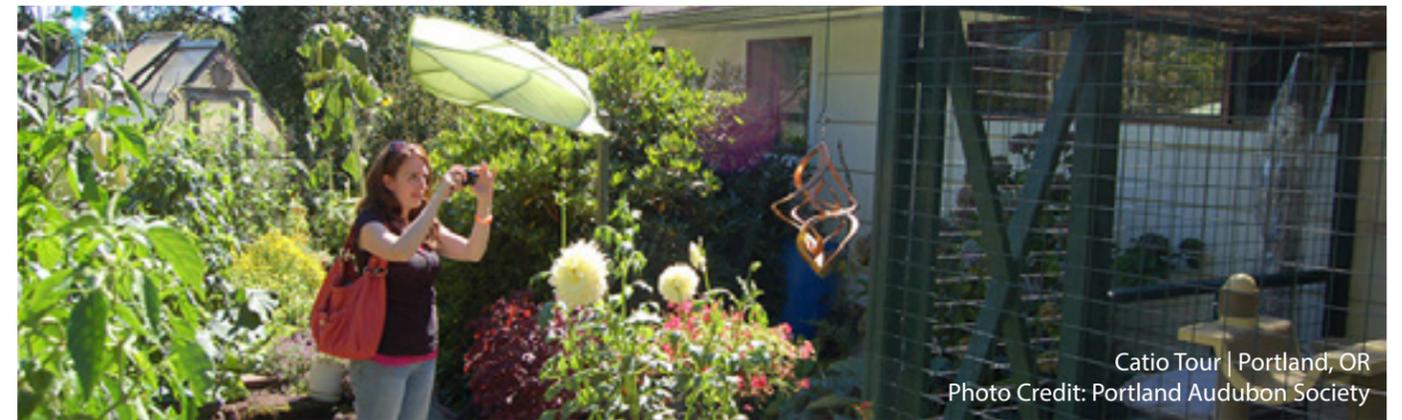
momentum. This is evidenced by several interesting trends we have seen. First, we continue to make progress in expanding the Network, welcoming new cities to the ranks of partner cities, including: Edinburgh, Scotland; and Panama City, Panama. This is certainly one measure of the progress we are making. Another way in which the language and vision of Biophilic Cities is being used is to frame global convenings. In the last half-year, we have been involved in several conferences explicitly focused on the subject of biophilic cities. These included conferences hosted at the University of Greenwich in London, and at the Queens University in Belfast,

Northern Ireland. An even larger example was evident in July, when the International Federation of Landscape Architects (IFLA) chose biophilic cities as one of the main themes for its World Congress. I was honored to travel there to present a keynote address to its 1,500 delegates, and to help judge a student competition.

There has been a parallel emphasis in the literature, and (at least) three difference journals -- Sustainable Earth, Sustainability, and Cities & Health -- are each organizing special issues focused on biophilic cities. There is (and will be) a growing body of peer-reviewed journal articles, and a growing number of publishing opportunities for those interested in shaping the path forward.

In addition to forward looking-research and scholarship, I believe we also need to better understand (and re-discover) the many historical precedents and examples of biophilic design and planning, including early leaders and pioneering projects that still guide and inspire. The Journal will in the future work to profile such projects, practitioners and thought leaders that make up the stock of practice, theory and ideas, much of which we have forgotten or taken for granted.

As a first foray into this effort, in an article in the pages to follow, I document a serendipitous stop that led to interesting new insights about the heritage of biophilic design and planning. This past December, I stopped to visit Florida Southern College in



Catio Tour | Portland, OR
Photo Credit: Portland Audubon Society

Lakeland, Florida. It is an unlikely location for the largest single collection of Frank Lloyd Wright-designed buildings anywhere. This has led me to reflect anew on Wright's influence; both the deep natureful connections of Wright's buildings and his design philosophy. The campus provides the opportunity to get a sense of what his biophilic design might mean at a larger scale. His original vision is a compelling one of magical buildings, like the Annie Pfeiffer Chapel, growing up between the trees of an orange grove. It is a story of lost magic, or perhaps the promise of magic returned, should support emerge for re-planting the citrus forest that was once at the center of Wright's vision for the campus.

As Biophilic Cities continues to gain traction globally, whether in film or our exploration of

the historical roots of biophilic planning and design, we need to remain observant and speak of a just magic, which delivers the beauty and solace of the natural world to all urban neighborhoods, to all residents. The power and medicine of those trees that Diana Beresford-Kroeger cherishes need to be fairly shared and this is a hallmark of a Natureful City.

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Cully Park | Portland, OR
Photo Credit: Tim Beatley



Folkets Park, Copenhagen
Photo Credit: Steven Johnson, Boundless

The Inclusive Healthy Places Framework: A New Tool for Social Resilience and Public Infrastructure

By Jennifer Gardner

Social resilience is a characteristic that describes a community’s ability to thrive during times of stability, and to adapt, organize, and grow in response to change or disruption. These abilities depend, in an important way, on the degree to which people feel connected to one another. Public spaces can help create and sustain those connections. Parks, sidewalks, streets, schools, libraries, transportation networks—the public realm—is our everyday social infrastructure. This is where planned and chance social interactions take place,

strengthening a person’s sense of community and reducing isolation. Well-designed public spaces serve as places where social connections develop and are sustained. They work best when there are reasons to stop and linger, and when they cultivate a sense of belonging and ownership among diverse people and groups.

Folkets Park in Copenhagen, Denmark delivers in all of these ways. A true “people’s park,” the urban green space was redesigned by and for a diverse group of people in the

surrounding neighborhood. Parents with young children visit the playground, members of the new immigrant communities in the neighborhood gather by the fire pit, local teens hang out with their friends, elderly folks meet for fresh air and conversation, and homeless men and women stop to spend the night under shelter. The space is made up of informal-looking elements like concrete ping-pong tables, rocky seating ledges, and a brightly hand-painted climbing and play structure sized for both children and adults. The attitude of park users here is generally accepting

and live-and-let-live. This is truly inclusion by design.

But the park didn’t always work like this. A previous set of park improvements left the park unwelcoming and underutilized. Hearing community complaints, city planners set out to figure out what had gone wrong. The park is located in Nørrebro, a Copenhagen neighborhood noted for its cultural and economic diversity. The city project staff viewed this diversity as an asset. They also adopted an unusual tactic: they enlisted an artist to co-create a design process to change the relationship of the community to the site, while highlighting local expertise and input on changes to the urban design. Through an intensive two-year engagement, and with the leadership of artist Kenneth Balfelt, both process and final design broke all the “rules” of traditional urban design to balance the needs of people in new ways.

Project leaders created a public process that encouraged park users and neighbors from all walks of life to share their perspectives. This facilitated clarity about the values and goals shared by all. But they also prioritized the needs of the most vulnerable groups of park users, such as those who depended on the space for shelter.

For example, with input from the homeless people who use the park at all hours, designers created soft, carefully located lighting because more typical security flood lights made some people feel more exposed and



Graffiti in Nørrebro, Copenhagen
Photo Credit: Tiws, Flickr

vulnerable. The final park design also includes a shade and weather shelter, a new public toilet, play areas, new seating, and rolling, grassy areas -- flexible and adaptable elements.

The community welcomed the final result as reflective of their wants and needs. Folkets Park demonstrates how high quality and well-maintained public spaces designed with inclusion as a core value can cultivate trust and ownership, increase accessibility and make diverse people feel welcome, and bring health benefits to the whole community.

Common Barriers and Opportunities to Link Place and Health

Public spaces like Folkets Park aren’t just nice to have; they’re essential to building healthy communities and cities, and inclusive processes and outcomes are core to their success. How can planners and policymakers better make the case for this in their

own cities and towns?

First, we understand there is a link between place and health equity. A wealth of research from the fields of public health, social science, and urban planning increasingly points to something most of us know intuitively: place is integral to health. Consider the evidence: ZIP codes are linked to life expectancy; and access to neighborhood green space decreases the likelihood of depression. These are just two examples of how where we live and work strongly impacts our day-to-day lives and health exposures. These factors--the social determinants of health--are important because they can be changed and improved through personal choice, as well as through policy, planning, public programs, social services, and design. Health equity is about recognizing that not everyone has the same needs for good health. When we pursue plans, policies and other place-based approaches that are

meant to influence more equitable health outcomes, we must first find the barriers that stand in the way of good health for different individuals and groups, and then remove them in a way that addresses not just the symptoms but also the root causes. Systemic challenges are inherently hard to identify and resolve, which is one reason that multi-benefit strategies like public space improvement programs can be effective starting points.

Second, we know our surroundings matter, including the built environment. According to some researchers, up to 80% of the factors contributing to a person's health outcomes are attributable to the environment and behavior choices our environments inspire. Because the symptoms of poor urban public health can be so diverse, ranging from rates of social isolation to rates of childhood asthma, identifying and resolving the root causes can be a huge challenge. But, the potential of the public realm to provide multiple benefits that are accessible to all is an

opportunity to improve health that shouldn't be overlooked. Imagine a city full of public parks like the one in Copenhagen. The people who shape cities should care deeply about the role of public spaces and other forms of social infrastructure, because safeguarding the health and wellbeing of citizens is one of the fundamental roles of public policy.

Third, we know that not all spaces are created or maintained equally, or with considerations for all people in mind. Making matters worse, negative factors tend to be correlated and concentrated, meaning some groups of people are far more vulnerable to poor health, simply because the places where they live have introduced disadvantages into their lives. While our everyday environments play an integral role in shaping how healthy we are, unequal environments and inequality in our day-to-day lived experiences produce concentrated inequitable health outcomes.

Inclusive public spaces can support health more equitably in many ways, including:

- Being accessible and welcoming to everyone
- Offering a sense of place and belonging to more than one group of people
- Reflecting shared social values, like dignity and respect
- Promoting trust and participation in public processes and institutions
- Supporting vibrant, diverse social interaction
- Allowing people to use public space in flexible ways, such as for physical activity, relaxation, socializing, events, and more
- Supporting and sustaining the natural assets and strengths of a place and its people, including social systems and ecosystems
- Providing a point of connection for community networks and resources.



Photo Credit: Steven Johnson, Boundless

Prioritizing Social Resilience for Adaptable Communities and Spaces

Healthy places are connected by a network of quality, shared public spaces and social infrastructure that supports connections between neighbors and ensure everyone feels welcome. But, in dynamic urban environments, it is important for planners and policymakers to remember that even seemingly positive changes can pose threats to community stability. For community members to experience the health benefits of inclusive processes and places, they need to be able to stay in a place despite pressures of urban change, like gentrification-driven displacement. The threat of displacement is felt most strongly in places where people are already experiencing poor health and a lack of social cohesion. In other words, to see long-term community health improvements, people must

be represented and engaged as stakeholders on an ongoing basis. A stable and adaptable community has to have the ability to shape its own future.

Representative and inclusive public processes can better identify people's diverse needs, and help direct the benefit of public and private investment, and other drivers of urban change, back to the communities themselves. Unfortunately, there is often a lack of information and tools to help stakeholders collaborate on this work effectively. Community health impacts aren't often considered by city planners, urban designers, or public agencies dedicated to local development. And when they are, participants in the process aren't always speaking the same language or valuing the same outcomes. Without shared values, resources, and metrics, it's impossible to measure success.

A New Framework for Healthy Cities through Inclusive Public Spaces

To bridge these gaps, Gehl Institute collaborated with the Robert Wood Johnson Foundation to develop the [Inclusive Healthy Places Framework](#). We created the Framework as a tool to help public realm practitioners identify social determinants that their work can improve, and remove systemic barriers to health.

No single public space or program will resolve entrenched, systemic inequalities, but new ways of working on individual projects with inclusion and health as core values should help move the needle towards improving certain health outcomes for individuals and communities. Good policy and design solutions will be contextual and driven by local needs and assets. As in the Folkets Park example, the



Photo Credit: Jennifer Gardner



Photo Credit: Steven Johnson, Boundless

success of a public space is often determined by engagement and governance strategies, even more than the physical design.

The Inclusive Healthy Places Framework is a research-based guide for understanding and leveraging inclusion in both process and design to improve health--measured against a broad range of social and physical health indicators. Whether assessing the quality of a public space and its ability to accommodate different uses to decide how to invest limited public funds or mapping social assets that can support the founding of a streets and sidewalks stewardship organization, applying an equity-focused framework can help community leaders, local decision makers, practitioners, and researchers to speak a shared language of inclusion, putting people first. The Framework can be used to study neighborhoods, shape initiatives, track the progress of programs, and understand the impacts of health equity work in the public realm over the long term. Like a resilient community, the Framework is meant to be flexible and adaptable to different circumstances and local priorities, as well as change over time.

Public spaces are constantly changing social environments shaped by the equally dynamic communities who use them and depend on the many benefits they offer. This new Framework is an adaptable tool intended to support placemakers of all kinds to shape, implement,

and evaluate the impact of greater inclusion on the social determinants of health that connect to the public realm. We hope it will be tested and applied to a wide range of public space projects and programs so the drivers of health equity and the role of inclusionary practices can be better understood and shared.

Jennifer Gardner is an urban planner and program manager at Gehl Institute in New York.

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Figure 1: Rest Stop, by Interboro Partners
Photo Credit: Hester Street Collaborative

Paths to Pier 42: The Challenges of Making Biophilia Equitable in New York City

By Barbara Brown Wilson

We've been totally ignored. If you walk to South Street [(Waterfront Park)], it looks like a piece of junkyard. They did fix it a little bit and they put some exercise bars and things like that, but still, nothing compared to when you see what residents have on the West side. My neighbors go to the West side to use the parks there, but they have to pay for the bus. And so, when they did the People's Plan for the East River Waterfront they started talking about ways to stop the flooding naturally while also giving us access to the water. And I said, "Okay, now we're talking."

—Aixa Torres, President of Alfred E. Smith Resident Association

The Lower East Side (LES) of Manhattan is known for its rich, cultural fabric and beautiful, historic streetscapes. It includes distinctive enclaves, such as the East Village, Alphabet City, Chinatown, the Bowery, and Little Italy. But this vibrant community, which is home to many immigrants and lower-income households, has become a target of real estate developers. The stressors of gentrification are so strong that the National Trust for

Historic Preservation designated the LES one of America's Most Endangered Places in 2008.

Despite the development interests pressing upon it, the LES waterfront continues to lag behind most of Manhattan in terms of public amenities. In Battery Park, a wealthy enclave across Manhattan to the west, you'll find beautiful flower gardens, countless sculptures, and an aquatic-themed carousel.

Across the East River from the LES, Brooklyn Bridge Park boasts a roller-skating rink, an educational center, a swimming pool, and a barge-music venue, among other amenities. These beautiful parks serve as physical reminders of the lack of services throughout the LES.

Near Pier 42 on the LES—which also happens to be where the largest percentage of public housing abuts a waterfront in all

five boroughs—the waterfront remains marked by warehouses and brownfields (figure 2). There is a bike and pedestrian path along the waterfront, but LES residents must brave notoriously dangerous underpasses beneath FDR Drive to reach it.

Based on a robust community visioning process and an independent financial review of both plans by Pratt Institute, the People's Plan would offer amenities such as open-space parks, greenways, public restrooms, a community center, an

engaged while building resources and momentum during the multiyear campaign for the People's Plan.

The story of the P2P42 project illustrates an innovative approach to community-driven urban change in a very strong market economy, where the speed of development is often too fast for residents to contribute. It also sheds light on the challenges and opportunities of implementing biophilic urbanism in lower-income communities.

Mapping the Lower East Side

As with many neighborhoods, the boundaries of the LES can be fluid and overlapping. For the purposes of the P2P42 project, the LES includes the East Village, Chinatown, Little Italy, and the Bowery (figure 3). The LES is home to more than 75,000 people, 18 percent of whom are under the age of 20. Almost 40 percent of residents are Latino, 25 percent Asian, 22 percent white, and 9 percent black, according to census data. Roughly a third of families live below the poverty line and pay less than \$500 per month in rent. Almost a third are foreign born. Within walking distance of the Pier, the population is approximately 40 percent Asian and more than 40 percent foreign born.

These residents live in an environment shaped by a legacy of displacement. Originally occupied by the Lenape tribe, by the seventeenth century, the LES was home to several farms, later subdivided to form the neighborhood's major street

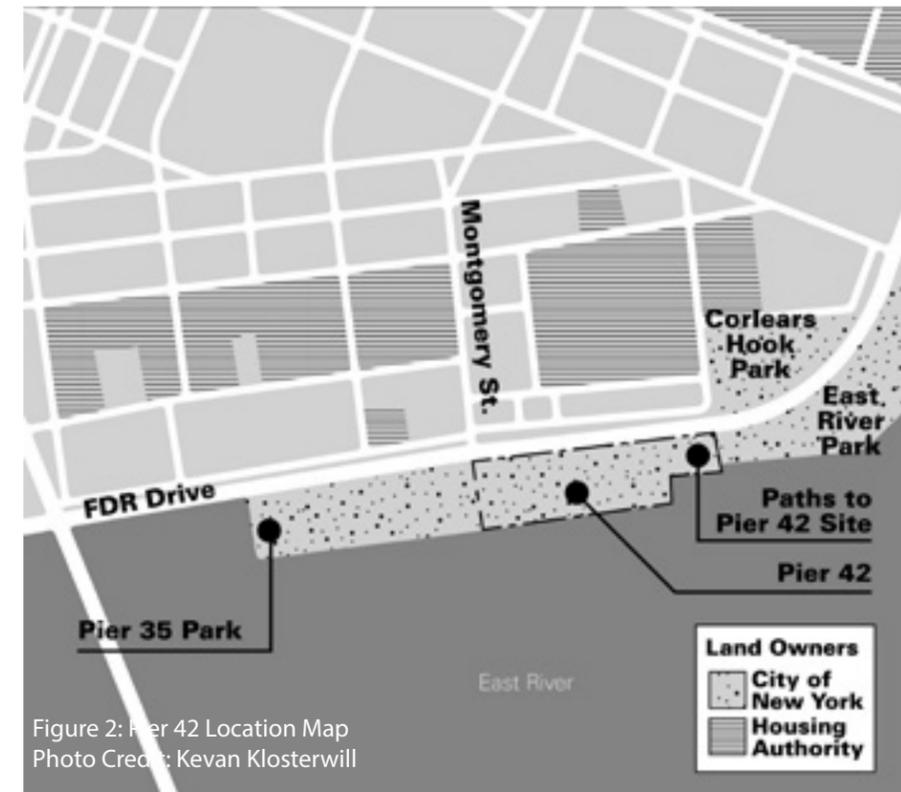
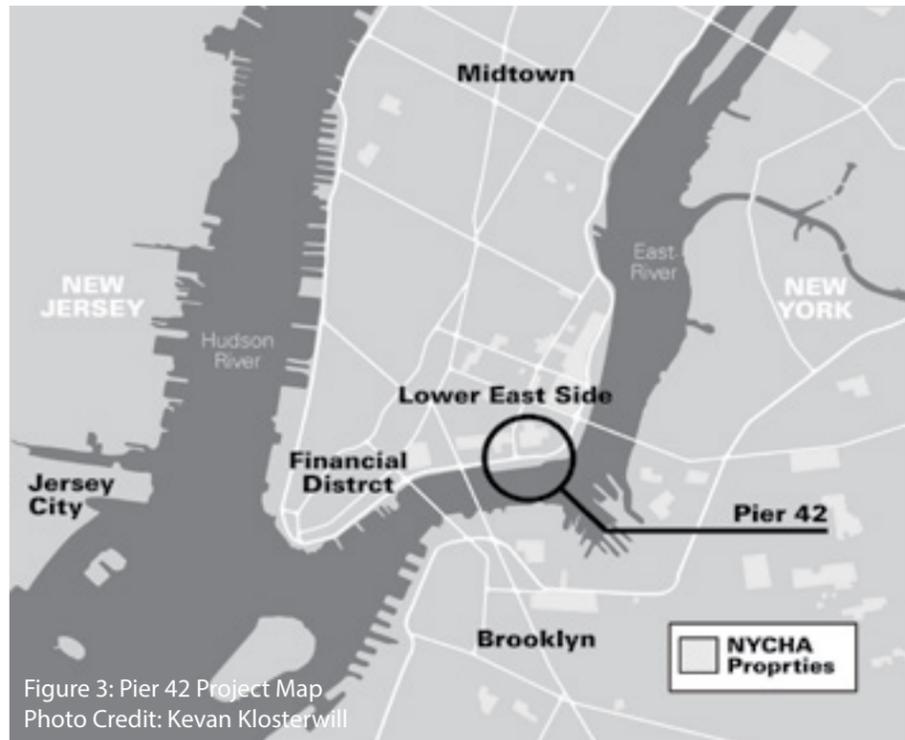


Figure 2: Pier 42 Location Map
Photo Credit: Kevan Klosterwill

Beginning in 2005, LES residents sought to influence the redevelopment of the waterfront through a combination of grassroots organizing and [social practice art](#) in a temporary park. The effort began in response to a waterfront-redevelopment plan put forth by the NYC Economic Development Corporation (EDC), which featured high-end lofts and shops that would not suit the needs of existing residents. Feeling completely ignored by the EDC plan, a coalition of LES community organizers, residents, and designers came up with a "People's Plan" for the East River Waterfront.

inlet and river pool, and space for environmental education and community gardens. The City was receptive to the People's Plan but noted that it would take years to raise the money and political support necessary to fully implement it.

In the interim, a network of community organizations joined with arts and design-focused groups to create the Paths to Pier 42 (P2P42) project—a temporary park with art and design installations created by commissioned artists, in collaboration with community residents. The project was developed to keep residents



grids. The area around Rutgers Farm and other areas adjacent to the East River became the site of much waterfront and industrial development, including piers, slips, warehouses, and factories. This set the LES on a trajectory of urban development that continues today.

The LES has a strong civic infrastructure, with [long-standing community organizations and tenant associations](#) that take on new forms as new challenges emerge. These include the Henry Street Settlement and the Chinese Consolidated Benevolent Association, which have been present in the community since the late 1800s. This strong civic infrastructure can be seen in the P2P42 network, and also in the People’s Plan that inspired P2P42.

A Temporary Park with Long-Term Goals

The relationships that drove the

creation of the People’s Plan for the East River waterfront became the foundation for the P2P42 project network (figure 4).

After the People’s Plan was released, the coalition successfully advocated to transfer control of Pier 42 to the NYC Parks Department, and the project was awarded \$14 million from the Lower Manhattan Development Corporation to jumpstart reconstruction. But, as Hester Street Collaborative’s former design director Dylan House explained: “\$14 million is just the tip of the iceberg in terms of the overall budget of what a capital project for the waterfront would be. It’s more like a \$90 million project. So how do we keep people involved, raise awareness about this site and build community ownership of it?”

With these questions in mind, the P2P42 project was launched, but just weeks before Superstorm Sandy hit the New York region.

The brownfield site was flooded and became even less welcoming than before. LES residents suffered great hardship: In the high-rise public housing across the street from the Pier, power was off for weeks after a flooded substation exploded. Residents, many with limited mobility, lived without air conditioning or functional elevators. And local small businesses, including community grocers, also closed—some never to return—resulting in a long-term amenity loss, as well as profound short-term difficulty.

The P2P42 network responded by using project events as a platform for local groups to share information and produce community-based art that helped residents to process their emotions at each stage of the recovery process. The community organizing legacy of the LES provided a civic infrastructure on which it could rely during the Sandy recovery process. These social networks helped LES residents increase their adaptive capacity to post-storm stressors, and the community demonstrated a greater ability to mobilize broadly and collectively around resilience needs in Sandy’s aftermath. For instance, the neighborhood quickly formed the Lower East Side Long Term Recovery Group ([LES Ready!](#)) after Sandy, an open coalition meant to “cooperatively coordinate response, resources, preparedness planning and training in response to Superstorm Sandy and in the event of future disasters.” This group of organizations used P2P42 as a venue to educate the neighborhood on available services, as well as to gather data

about local recovery needs.

As federal, state, and private funding flowed into Manhattan after Sandy, many alternative redevelopment agendas for the area emerged. LES Ready! community organizers worked in collaboration, and with renewed momentum, to maintain the community’s vision of the waterfront. But the People’s Plan for the park still required significant fundraising before it

could be built, and the influx of new, outside interests hoping to contribute to the future vision for Manhattan’s waterfront put the community-driven plan at risk of appropriation.

The temporary park project spanned three years and included a series of temporary, creative installations. Year one focused on turning the patches of uneven concrete into a usable park. These early installations tended to be

large-scale efforts, including signage, shading, plant life, and reclaimed water sources. They included the Rest Stop project, designed and built by Interboro Partners, which created custom planter/benches from recycled lumber to temporarily hold saplings that replaced those lost during Superstorm Sandy (figure 1). The trees were later replanted at nearby public housing properties.

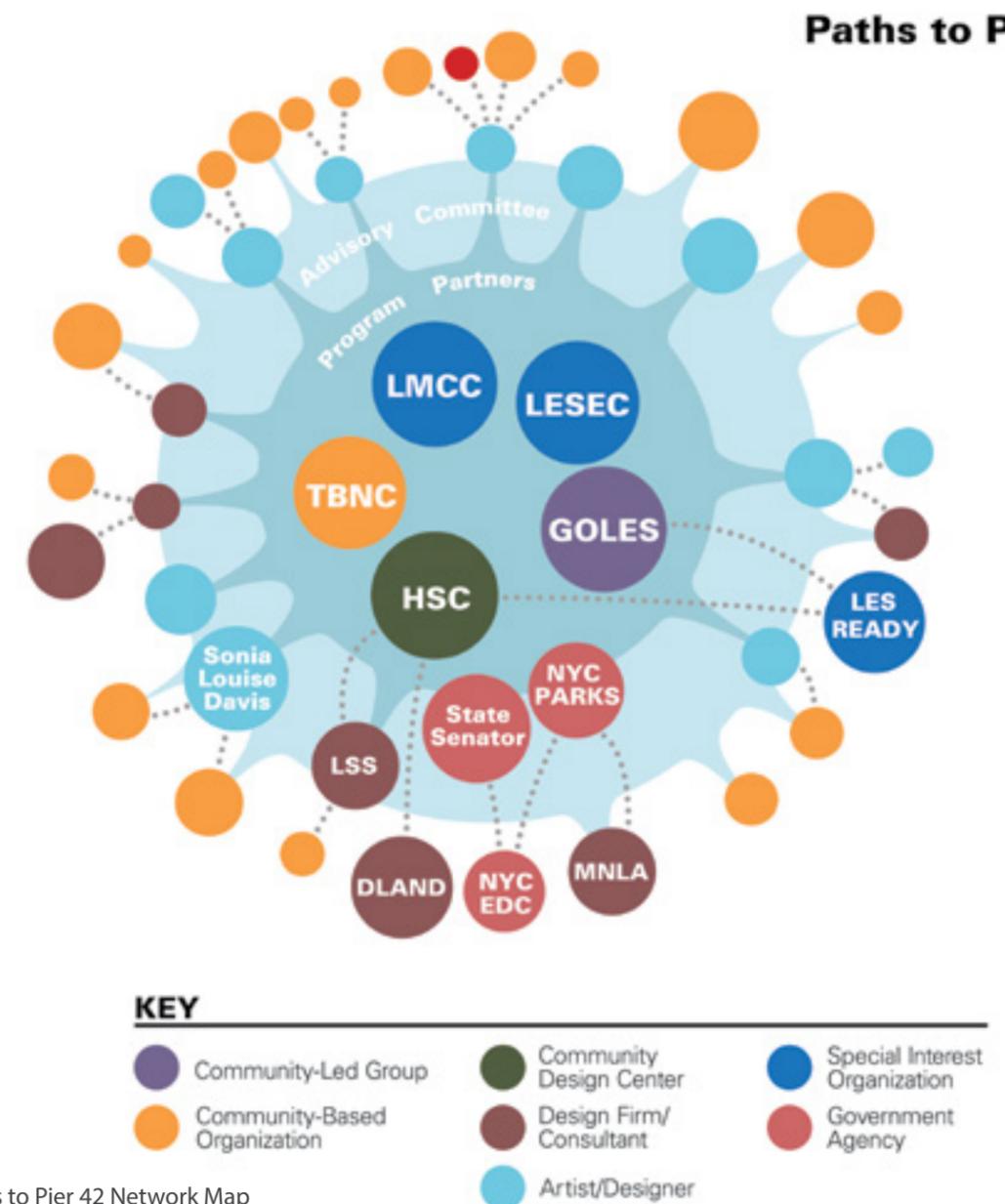


Figure 4: Paths to Pier 42 Network Map
Photo Credit: Kevan Klosterwill

As the temporary park made the space more hospitable, there were additional opportunities to engage the community in artistic projects. One of the most beloved projects was the People's Poster Project, facilitated by Harlem-based artist Sonia Louise Davis. The project gave residents the opportunity to express themselves individually and collectively through a series of black and white posters featuring portraits of residents with artifacts that held significance for them. More experimental art, like the Inked Garden—where plants were brought in and dipped in Chinese ink to show the flora's resilience as it grew new green sprouts—were not always popular with residents, but they provoked rich conversations (figure 5). Residents engaged with the art in a variety of ways, depending on the piece's medium and approach, but all the art was filtered through a robust community discourse during P2P42 public events.

Placemaking or Placekeeping?

Placemaking, community-engaged design, and tactical urbanism are all tools meant to assert alternative visions for what an urban space could be. These ideas, which share an emphasis on manifesting the unique spirit of the community, are increasingly popular across the United States. New York City has seen many efforts that reflect these trends, resulting in an urban environment where a variety of both sanctioned and informal interventions often meld in the constant remaking of the cityscape.

Placemaking is not new to New York City. Under Mayor Bloomberg, the City of New York hosted a variety of projects that pushed placemaking in new directions that redefined public space, using methods also known as tactical urbanism. Projects ranged from the High Line, a prominent example of

adaptive reuse of seemingly uninviting infrastructure, to the experimental closure of portions of Times Square's vehicular areas for pedestrian plazas. But these examples are all driven by top-down and often [white, upper-income design-friendly conceptions of a place](#). Designers of such spaces, among them creative placemaking advocates, are eager to showcase how their lofty designs can strengthen grassroots efforts.

But [few placemaking creatives understand how urban revitalization projects that alter the civic urban fabric](#) of lower income communities can be paired with anti-displacement strategies that allow people to stay through positive neighborhood change. For instance, [High Line founder Robert Hammond](#) regrets his myopic focus on improving urban infrastructure without considering how it might harm their neighbors: "Instead of

asking what the design should look like, I wish we'd asked, 'What can we do for you?' People have bigger problems than design." In Washington, D.C., the [11th Street Bridge Park Project](#) has formed a community-engaged coalition in order to ensure they do not make the same mistakes. The 11th Street Bridge Park team first focused their fundraising efforts on wealth generation and home ownership strategies to help residents resist displacement pressures as the adaptive reuse of this bridge attracts speculative development capital.

At P2P42, this tension was resolved through a myriad of different approaches to the work. First, a community-driven decision-making body chose every project and linked each artist with appropriate community partners. Second, the built worlds are all ephemeral in nature, so there are no permanent changes that would exacerbate market pressures. Third, these temporary projects served to intentionally hold space for the People's Plan to gain the financial momentum it needs for implementation. Fourth, the focus on community-led events to build social capital provided a social and physical space for LES Ready! to convene as it sought to connect residents with recovery assistance and to process trauma just after Superstorm Sandy.

Through community-engaged artistic and design practices, P2P42 re-connected residents with their waterfront, with each other, and with a future vision for a People's Waterfront. After the

first three-year project, the city asked the Good Old Lower East Side (GOLES), the community organizing partner on the project team, to keep the programming on the Pier alive while they continued to fund-raise and get the remediation plans in order. The ["rusty shed"](#) was demolished in fall of 2018, with Phase 1 design installations coming first, and full completion of the park scheduled for 2020.

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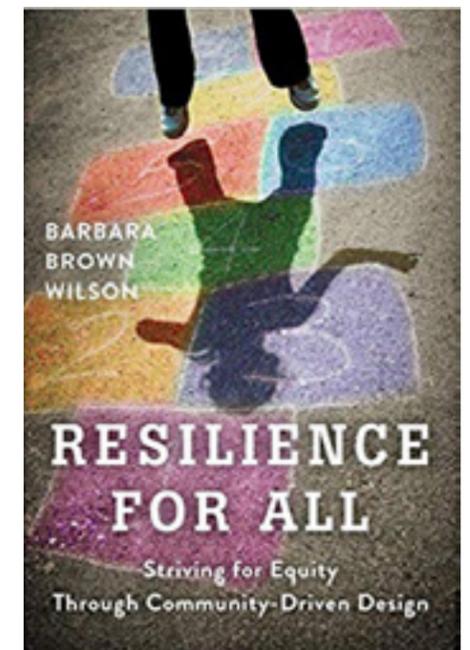
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This excerpt is adapted from Chapter 4 in Wilson's recent book, [Resilience for All: Striving for Equity through Community-Driven Design](#) (Island Press, 2018)



Figure 5: Inked Garden, by Jennifer Wen Ma
Photo Credit: Hester Street Collaborative





Liberation Garden, Domiz Camp
Photo Credit: Dirk Jan-Vlsser

Accidental Cities: The Challenge of Greening Refugee Camps

Alfonso Montiel, CEO, [The Lemon Tree Trust](#)

Forced to turn your back on a war torn home, you embark on a 10-day trek across freezing mountains and arid valleys with a child on each hand and a bag containing your remaining belongings. A canvas tent in the desert becomes your new home. Tents, spread out as far as the eye can see, house your new neighbours. It is 2012. Your name is Sami Youssef, a 33 year-old Syrian with a PhD in Agroecology and a young family. Your new home is Domiz refugee camp in the Kurdistan Region of Iraq.

Six years later Domiz is no longer just a place to seek safety and security; it's now home to 30,000 people. Domiz has schools, a hospital and a large

supermarket, even wedding dress shops. Children's laughter is a common sound, and neighbours are now friends and colleagues. Domiz, by accident, has become a city. Across a neighbouring continent in Bangladesh, reportedly the world's largest refugee camp, Kutupalong near Cox's Bazar, faces a similar fate. Now home to more than 1 million people, the camp is more likely to grow in population than to be rendered unnecessary any time soon. Hundreds of refugee camps around the globe reflect the same pattern. These accidental cities have similar challenges to cities in developing countries; however, their unfortunate proximity to war zones, means the prospects for residents establishing normal urban life are limited.

According to Stephanie Hunt, Founder of the Lemon Tree Trust: "Bakeries and shops help people to survive but trees and gardens remind people of home and help them come to terms with their new lives. They are crucial for improving the environment and creating a sustainable place to live." With support from Sami Youssef and a growing team of refugees, the Lemon Tree Trust is transforming refugee camps, one garden at a time. For many camp residents, having a small patch of garden is a significant source of solace and a connection with their previous life. Gardening produces beauty, engenders belonging, aids food security, and promises valuable and unique economic stimulation. The Lemon Tree Trust has

three main areas of activity. The foundation of our organization is the sponsorship of camp garden competitions to encourage individual refugees and families to establish home gardens and compete annually to win a prize. We also support the development of community garden spaces within refugee camps to grow food and flowers for redistribution to vulnerable families, utilizing greywater wherever possible for environmental sustainability. These community gardens offer a place for people to learn new horticultural skills and a place to meet regularly to socialize, share stories and support each other. Finally, we are developing small business enterprises run for and by refugees.



Garden Festival
Photo Credit: Dirk Jan-Visser

By establishing garden-based businesses themselves, refugees are empowered to create opportunity and seek economic stability. In 2018 alone, the Lemon Tree Trust distributed over 40,000 plants and trees throughout refugee camps in Northern Iraq. We ran garden competitions across 5 refugee camps in the region, attracting over 1,000 entries.

camp design, encouraging camp management to build in urban agriculture, domestic gardens and camp “greening” infrastructure from the outset. We hope for everyone to see them for what they are, accidental cities, and to see residents like Sami as people capable of greening an entire city.

Resource:

The Lemon Tree Trust. <https://lemontreetrust.org>.

The Lemon Tree Trust aims to expose every refugee camp in the world to gardening through these core areas of activities. We hope to start similar projects in Syria and Uganda, with Jordan, Lebanon, and Greece also in the pipeline. We hope that the work underway in Domiz will help develop a “blueprint” for future



Aveen
Photo Credit: Dirk Jan-Visser



Home Garden
Photo Credit: Dirk Jan-Visser



Image Credit: Rutas Naturbanas

Reconciling Costa Rica's Cities

By Federico J. Cartín-Arteaga, MUP

President & Director General, Rutas Naturbanas Foundation

Few countries in the world have such a recognizable global environmental image as Costa Rica. By many standards, the country is well known for its historic environmental stewardship. We have decarbonized 100% of our electric generation with renewables, we not only halted deforestation but reversed it to increase forest coverage to nearly 60% of the country and have set aside 30% of the country as National Parks and Reserves.

The paradox.

Conversely, our cities - and particularly those belonging to the capital region of San José - do not stand out as speaking to those historical achievements. In fact, fossil fuels are used to power close to 100% of transportation, parks and public space barely cover 3% of the city of San José, and [the capital region has 0% forest coverage](#). In a city that is - finally - densifying, inhabitants contend with less public and natural space.

Additionally, the Grande de Tárcoles river basin is the most contaminated in all of Central America. Effluents flow from rivers in the capital region to the Tárcoles carrying solid and liquid waste to the river and then into the Pacific Ocean. A large part of this is due to how the city has been built: neglecting its urban rivers with large walls segregating the built form from natural urban ecosystems. A city that turns its back on its nature is a city that invites peril.

The road to hell is paved with good intentions.

Government introduced regulations to set aside a 10 to 50 metre construction setbacks from urban rivers to protect and shed the waterway. However, the setbacks remained private and became a liability, not an asset. Property owners were left with a strip of land that they couldn't utilize. Their response was to protect themselves by building walls that would protect their homes and investments from this "no man's land" that could become a source of theft. The result was a series of "invisible" setbacks that have given way to illegal waste dumping, construction and defiling of the habitat.

So, in a country where the biggest sense of national pride

stems from the conservation of our tropical nature, we have historically overlooked this wonderful opportunity in our cities.

Citizens leading the way.

Three years ago, a group of citizens united to shift this reality entirely. We set out to rescue 25 kilometers (15 miles) of the two main rivers in the capital, the Torres and María Aguilar, to allow people to walk, bike and stroll along these beautiful areas that the city had long neglected. Our mission: "connect people to the city through nature." The restoration and reforestation of private riverbanks will create well over 70 new acres (nearly 30 hectares) of public space.

Interdisciplinary planning efforts among biologists, urban

planners, lawyers, engineers, architects, economists, forest engineers, and others gave birth to [Rutas Naturbanas](#) (Urban Nature Routes). The proposal shifted many paradigms. The most important among them: that nature and humans can coexist. In fact, reintroducing nature's most dangerous predator - humans - into the ecosystem might well be the only way to protect and regenerate the ecosystem within the urban realm.

Building infrastructure in these conservation areas will heal them by allowing communities access to these areas. Access to organize river clean-ups, reforestation efforts, and to both watch and report illegal activities, such as setback violations and solid waste dumping.



Grande de Tárcoles, Before Planned Rejuvenation
Photo Credit: Rutas Naturbanas

Beyond valuation.

Rutas Naturbanas will provide immense benefits to urban populations: they'll connect over 95 schools and universities; they'll allow people and visitors to bike and walk safely through the city; and they'll bring urban tourism, new retail and land value.

As we move forward in building our very first kilometer in 2019, which was donated privately with property owners ceding the right of way, the city's first urban-natural integration will emerge.

In this light, biophilic cities are less about bringing nature into the city but about saving nature that already exists, and in turn, saving ourselves.

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Rutas Naturbanas. <http://rutasnaturbanas.org>.

Federico J. Cartín-Arteaga is President & Director General of Rutas Naturbanas Foundation based in Costa Rica.



Project Aerial (Cover photo)
Image Credit: Rutas Naturbanas



Bottom Images: The First Kilometer
Image Credits: Rutas Naturbanas





Gillespie Park Entrance in Summertime
Photo Credit: City of Milwaukee

Milwaukee's Vacant Lot Strategy: Creating Biophilic Green Spaces in Underserved Neighborhoods

By Erik Shambarger and Tim McCollow

Butterflies, honey bees, and the striking purple of Echinacea have returned to the corner of 14th and Wright in Milwaukee's Lindsay Heights central city neighborhood with the creation of Gillespie Park.

Since 2014, the City of Milwaukee has been restoring urban wildlife habitat by converting grassy, vacant lots into pocket parks, fruit orchards, farms and community gardens. These new green spaces have significantly increased insect and pollinator

populations as measured anecdotally before and after green space creation.

In 2012, Mayor Tom Barrett created the [HOME GR/OWN](#) initiative, managed by the City of Milwaukee's Environmental Collaboration Office (ECO) – HOME GR/OWN is just one of ECO's initiatives to make Milwaukee a world-class eco-city.

Milwaukee owns approximately 3,000 grass-covered vacant lots, with eighty percent in a small

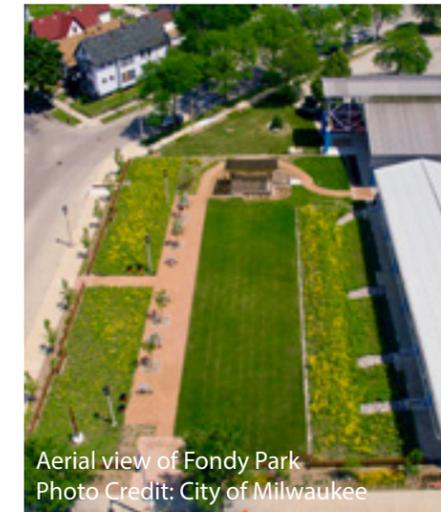
portion of our urban North Side. This area is economically challenged and underserved by Milwaukee County parks – as a result, little landscaping exists to support urban wildlife. The city's efforts to plant native perennials and trees has had a profound effect on urban wildlife, especially pollinators and birds. ECO and its partners are also creating additional opportunities for habitat through green infrastructure like bioswales and rain gardens in the neighborhood.

To date, HOME GR/OWN and its partners have converted over fifty vacant lots into thirty-two new green spaces that are intentionally clustered to create greater impact on neighborhood quality of life as well as create wildlife and pollinator corridors.

The initiative's latest and largest project is Fondy Park, sprouted from an idea in June 2016 with a grand opening in September 2017 – just fourteen months later. The site was a 3.5 acre vacant lot blighted for decades, surrounded by acres of concrete and bearing the legacy of a failed 2001 construction project. It is adjacent to the city's largest African American farmers market. After significant community input into park design and features, the project team of architects, stormwater engineers and landscapers focused on the site's attractiveness as a major green infrastructure installation to capture precipitation from the adjacent large farmers market's roofs.

Fondy Park's large bioswale captures 70,000 gallons of water

during a rain event. During construction, 1,300 potted native plants and nineteen trees were planted. The bioswale was seeded with wildflowers, grasses and sedges - designed for the mixture of dry and wet conditions. Though not a surprise, since we have seen it at other projects, bees and butterflies returned the day after the potted natives were planted!



Aerial view of Fondy Park
Photo Credit: City of Milwaukee

A prairie that mirrors the bioswale was seeded with a shortgrass prairie mix. With few prairie plantings in the city, we wanted to provide residents with that quintessential Plains and Midwest biome.



Fondy Park Fence Flowers and Stage Blocks

Since 2018 was our first spring and summer at the new park, the project team was anxious to witness the native plantings' emergence. Spoiler alert: they flowered beautifully. The highlight was easily the thousands of Black-Eyed Susans we enjoyed in July. Today, thousands of native plants and animals flourish in the formerly blighted lot. With birds in the bioswale, numerous bee species swarming in the catmint, and butterflies across the entire site, Fondy Park embodies biophilic principles and residents have noticed. The Park serves as a one-stop STEM/sustainability outdoor classroom given it's biophilic, stormwater management and solar features and is now used for yoga classes, weekly music performances, large community gatherings and pollinator awareness classes.

ECO HOME GR/OWN's vacant lot conversions, such as Fondy Park, are restoring Milwaukee's natural environment, growing food, creating new neighborhood gathering spaces and helping our most vulnerable neighborhoods adapt to climate change.

Erick Shambarger serves as Director of the City of Milwaukee's Environmental Collaboration Office (ECO).

Tim McCollow is Program Manager of ECO's HOME GR/OWN initiative.

Resource:

Environmental Collaboration Office (ECO). "HOME GR/OWN". City of Milwaukee. <https://city.milwaukee.gov/homegrown-milwaukee.com#.XF5KjwYuU>.

Seaholm Waterfront

Austin, TX

Austin Parks Foundation (APF), The Trail Foundation (TTF), and the City of Austin Parks and Recreation Department (PARC) have completed the planning study for the future of [Seaholm Waterfront](#), the historic Seaholm Intake structure and its surrounding parkland. The [Seaholm Waterfront Concept Study](#) from internationally recognized architecture and urbanism firm Studio Gang reimagines a dormant infrastructural asset on Austin's Lady Bird Lake as a celebrated part of civic life, inviting the entire city to engage with the waterfront and each other. The Study's concepts work to preserve the character of this signature asset and the surrounding park, while also positioning a new future for the Seaholm Waterfront as a recreational, cultural, and community-oriented resource.

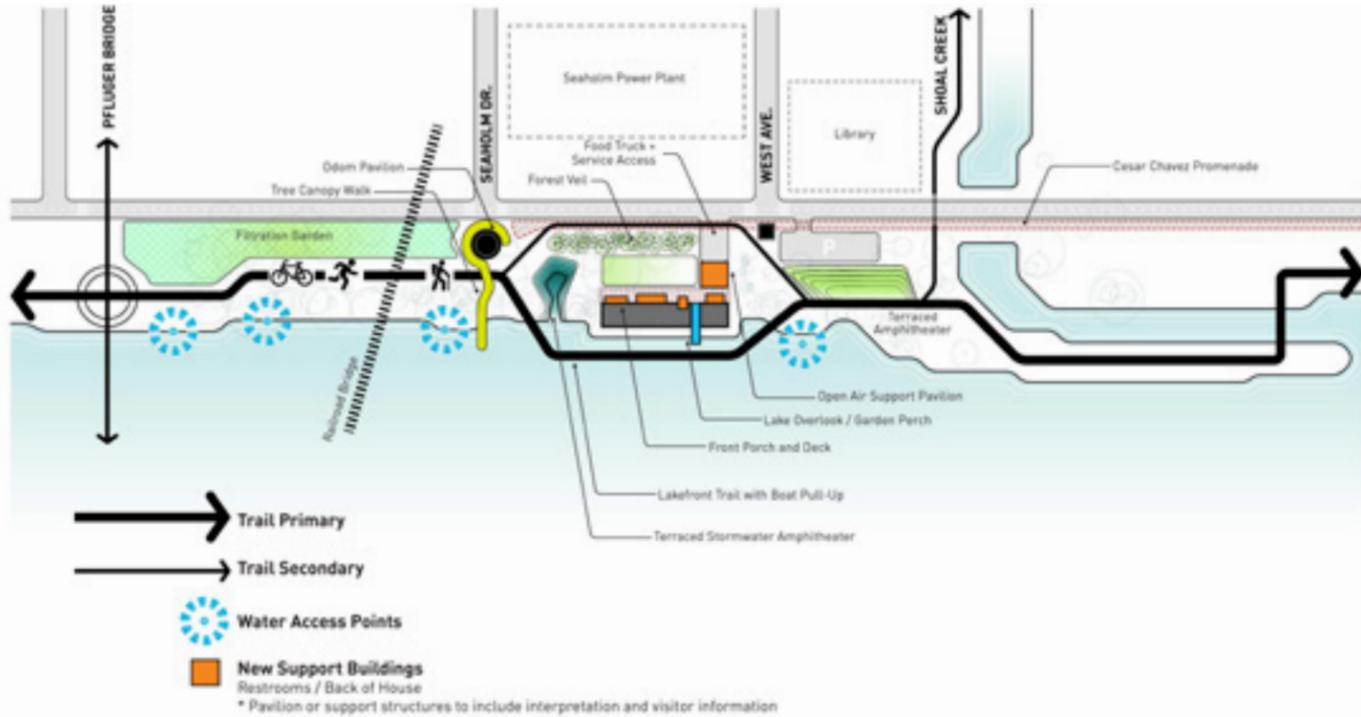
The preferred design concept for the adaptive re-use of the building features an open and flexible space that can be used any day by the public, or periodically for events, and on occasion for large gatherings with the ability to serve food and beverages. Several important principles guided the planning process and potential design of the Seaholm Waterfront including embracing and preserving the historic integrity of the building, engaging with the local community and experts, restoring and diversifying the ecology in the area, and building sustainable principles into the design and operational models.

Prior journal spotlight on [Studio Gang designed Rooftop Wheat Prairie](#)

The Trail runs along the edge of Lady Bird Lake where people can experience a diverse array of landscapes and ecology. There are various places, such as the Watering Hole, to pull up a kayak or paddleboard and to relax and enjoy the location on the water.



Seaholm Waterfront Renderings
Image Credits: Studio Gang



WATER ACCESS POINT
Recognizing trail users' desire to engage the waterfront, the provision of designated access points in turn protects adjacent native habitat. Hardscape improvements provide wayfinding, reduce trail erosion, and celebrate the path of water. Small docks can also offer boat tie-offs, allowing these nodes to become multinodal in nature.



Orway Building
Photo Credit: Ebyabe

Frank Lloyd Wright and Biophilic Cities Theory and History of Biophilic Design By Tim Beatley

Biophilia wasn't a word that Frank Lloyd Wright, arguably America's most famous architect, used or even knew of. But were he still designing today he would be an adherent to be sure. We owe much to Wright's ideas and innovative design, they were ahead of their time and they still inspire.

Fallingwater has become an iconic example of Biophilic Design, of course. But there are relatively few examples of Wright's work that apply his ideas beyond the scale of buildings. One remarkable, though still little known, example is his work, over a twenty year period, designing the campus and prominent buildings at Florida Southern College, in Lakeland, Florida. Some considerable serendipity and a bit of long standing curiosity led me (and my family) to visit to the College last December to see for ourselves

what Wright had created there. This is the largest single collection of Wright buildings (ten in total), and the only example of a Wright-designed campus. It is a remarkable ensemble of visually striking buildings, including the Pfeifer Chapel, the Roux Library, and the Water Dome. All connected by a network of covered walkways called the Esplanade, and each remarkable pieces of architecture in themselves.

UVA-trained architectural historian Dale Gyure, now a professor at the Lawrence Institute of Technology, authored *Frank Lloyd Wright's Florida Southern College* (2010). The book tells the story of Wright's remarkable twenty-year commission at the college. I interviewed Dale by phone about his research and some of the still unanswered questions about how Wright's ideas have unfolded at

Florida Southern.

The Annie Pfeiffer Chapel is especially compelling, and so unusual looking inside and out. Built from Wright's unique system of molded blocks, each is embedded with colored glass (red, blue, and yellow), adding a delightful subtle luminosity to the interior spaces with abundant daylight streaming in from five skylights as well as clerestory windows. Like many of Wright's buildings, the design was not perfect, especially in the eyes of users, who reported experiencing "hotspots," and the need to shift one's seating to avoid them. (None of these buildings were originally air conditioned, another admirable aspect of Wright's designs).

Opposite Page (Left and Middle):
Annie Pfeiffer Chapel; Photo Credit:
[airbus777](#)

Opposite Page (Right): Esplanade
Photo Credit: [Ebyabe](#)

"Buildings should seem to grow from the earth and belong as a tree belongs," Wright has said about his "organic architecture." As Gyure explains, "to Wright nature was everything." Organic architecture can be simply defined, as "architecture that exists in harmony with nature, uses as many natural materials as possible, and takes ideas from nature." Prospect and Refuge are found in most of Wright's designs, though the theory and language did not yet exist.

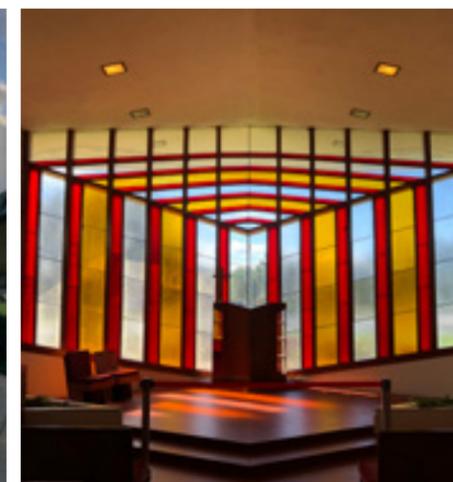
Where did this love of nature come from for Wright, I asked Gyure. Wright was a city kid, but did spent formative summers in the country. A strong Unitarian family was also an importance. "Throughout his career," Gyure tells me, "he would reference Ralph Waldo Emerson and the idea of unity, an idea that a drop of water contains the whole universe and that everything is interrelated." Many years of design tutelage under Louis Sullivan, who himself had interesting views on nature and architecture, and gradual exposure to the design traditions and heritage of Japan were also influences.



The collection of buildings designed by Wright is unique, and each one is a gem in its own right. But most interesting is what Wright had in mind for how these buildings would relate to each other and his larger vision for the campus. It provides at least an inkling of what a Wright-designed city, or smaller town or village at least, might look like. And it would be highly biophilic.

When Wright first visited the campus in 1938 he would have seen a large grove of orange trees on the site. There were probably more than 1000 trees, Gyure tells me, and he has collected and compared aerial photographs from the site taken over the years. Clearly, Wright was taken by the trees and envisioned a campus set in an orange grove. The master plan renderings show an expansive forest that fills almost all of the space between the buildings.

It is fun to imagine what it could have been like. Gyure describes how Wright likely saw a walk through the campus as a kind of mysterious journey -- no clear entrance, the esplanades would carry you forward in search of what might be ahead, buildings



that could only be partially spied, popping out in the distance above the trees, Mayan-like.

Today there are few trees and the look is more of a traditional clipped-grass college campus. How did this happen and was there an explicit decision somewhere along the way to give up on the "campus in a grove"? Gyure can't point to a specific decision, and believes it was likely a gradual shift, partly resulting from attrition as trees were removed or lost to storms. By 1968, Gyure says, most of the trees were gone. One of Wright's associates took over as campus architect at his death and likely he was less enamored of the trees, or not as willing to defend Wright's original concept for the campus. As Gyure says, it is hard to know for sure.

I wonder if it ever might be possible to return to Wright's vision and to replant the forest that has now been lost? Gyure notes that Florida Southern, ironically, is the home of the Florida Citrus Institute, and perhaps here lie (literally) the seeds (or shall we say the saplings) of a future biophilic campus restoration.





Island on the River
Photo Credit: Dominika P. Brodowicz

The Heart of Warsaw - The Vistula River

By Dominika P. Brodowicz

Warsaw has eighteen official administrative districts and one unofficial, but commonly recognized, nineteenth district – [the Vistula River](#). It is uncommon to find a river like the Vistula flowing through a European city anymore. It is unique because of its [wilderness, limited regulation and rich biodiversity](#), which includes: otters, beavers, white-tailed eagles and black storks. This situation is not the result of an urban master plan or green strategy implemented by the city decades ago. It is rather a combination of tragic history and the forces of nature.

Before WWII, the [area along the riverbanks was planned for development](#) including paved boulevards. The war stopped the entire process. The riverbanks were undeveloped and natural

settlements of birds and unique flora remained. This was a bittersweet triumph of nature because the war destroyed sixty-five percent of the city. During the 1950s and 1960s, decisions to modify the Vistula, which included narrowing the riverbed and moving the current towards the left bank, caused the river to flow faster. Many sandy beaches and islands in the city limits were lost to erosion, and banks were overgrown with trees and undergrowth. Birds and other species were unable to build nests. In the 1970s and 1980s both banks became places that were, quite frankly, off-limits for visitors due to the lack of walking paths and high level of criminal activities. About the same period, the Vistula's water and soil became heavily polluted by wastewater runoff.

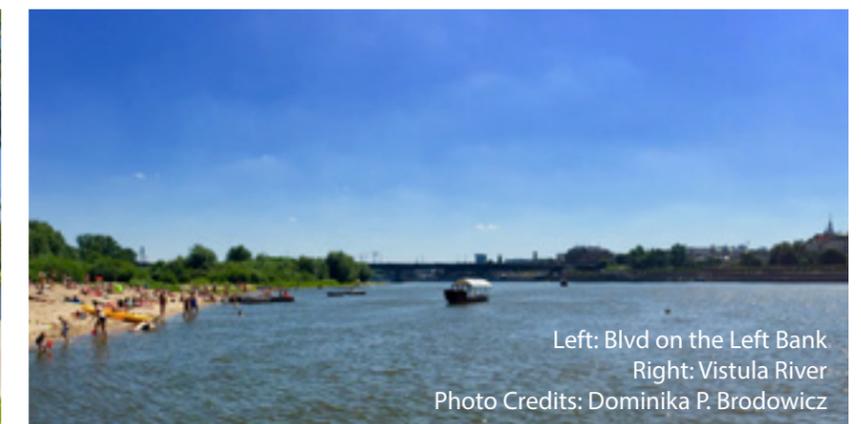
The situation has changed significantly in the years since Poland joined the European Union (EU). With pressure to comply with EU directives and regulations and access to EU funding, Warsaw was able to revitalize the river. The city has participated in projects and programs that include redevelopment of Warsaw's wastewater treatment plant, as well as the [Life+](#) program and [Natura 2000](#) network. It is estimated that between [five to seven thousand different species](#) live within the administrative boundaries of the city with a significant percentage of these species living in and along the banks of the river. Therefore, the Vistula plays a crucial part in Warsaw's biosystem.

[Czajka Wastewater Treatment Plant](#) (WWTP) was redeveloped and extended between 2010-2013 to comply with EU standards for effluent discharge. Prior to the redevelopment, as much as seventy percent of the city's municipal wastewater ended up in the Vistula untreated. This created health hazards both for households (the Vistula is used for city water) and wildlife. Warsaw was on EU's list of most heavily polluted cities. Today the Czajka, which is one of the largest WWTPs in Europe, complies with all EU standards and the water quality has improved significantly.

A project to protect key bird species' habitats in the Middle Vistula River Valley against the intensive pressure of the Warsaw metropolitan area was implemented within the framework of the Life+ program co-financed by the EU. The main goal was to restore breeding areas on the river for birds seeking refuge not only from civilization but also from fast-spreading plants, chiefly: ash, maples, and acacias taking over nesting locations. The project included cleaning up green areas and uncovering the rotting stubs with insects that birds feed on.

Another important initiative that helps to protect the biodiversity of the Vistula is Natura 2000. It is the largest coordinated network focused on "the long-term survival of Europe's most valuable and threatened species and habitats." Two locations, [the Zawady Islands and the Kiełpin Sandbanks](#), which include sand islands on the river and areas along the banks, are now protected under Natura 2000 and species like black storks, white-tailed eagles, terns and plovers can find a safe haven there.

Improvements to infrastructure, water quality and access to wildlife have encouraged Varsovians to return to the river. [The Guardian](#) and National Geographic have recognized Warsaw's riverbanks as one of the world's most beautiful city beaches. Today there are [more than 50 km of biking routes along the banks of the river and over 2 km of boulevards](#). So far, the coexistence between the wildlife and social life has worked well. Yet, given the growing popularity of commercial activities on the riverbanks it will be important to protect the wildlife even more diligently in the near future.



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Dominika P. Brodowicz is an Assistant Professor in the Innovative City Department, Warsaw School of Economics, and researcher in the field of green and smart cities.

Left: Blvd on the Left Bank
Right: Vistula River
Photo Credits: Dominika P. Brodowicz



All images courtesy of Catherine Werner

Planting Trees to Grow Communities

By Catherine L. Werner

Socio-economic environmental challenges and issues are of great interest in the City of St. Louis, a city struggling to reverse decades of disinvestment that has resulted in racial and economic disparities. To aid in addressing disparities in the abundance and accessibility of nature in communities, the city sought and received funding through a Partners for Places Green Infrastructure grant opportunity from The Funders' Network, to develop a triple bottom line sustainability project: *Using Trees as Green Infrastructure for Economic, Social and Environmental Outcomes*.

With the project period limited to a single year, the city and its local partners had to be very strategic in how to design a project that would meet two primary aims: (1) to conduct community tree plantings and (2) to develop summer youth jobs relating to urban forestry.

There are several organizations in the city that conduct greening efforts to enhance environmental conditions, including the city's key project partner, [Forest ReLeaf of Missouri](#). Although, it is much less common to undertake greening efforts – such as this project – with a primary objective

of improving community strength, trust and resilience by engaging police officers and firefighters in the process.

Triple bottom line sustainability objectives were factored in designing the project at the outset. A group of partners met with the city and Forest ReLeaf at the Missouri Botanical Garden. The city's Forestry Division, the Missouri Department of Conservation, the city's Police Department and [STL Youth Jobs](#) were joined by East-West Gateway Governments (the Metropolitan Planning Organization) and local funders

to create criteria for the selection of the four areas predicted to benefit most by the planting of 500 new trees. The priority selection criteria sought to identify areas within the city's stormwater sewershed with the following characteristics: high crime; high youth density; low tree canopy coverage; and a high ParkScore "access to nature" need. One requirement of the funding was that the 500 new trees should be planted on land owned by the city, so the decision was made to plant them in four city parks. The project consisted of two Spring 2018 tree plantings and two Fall 2018 tree plantings, and the parks were intentionally selected in parts of the city that experience socio-economic challenges, and where tree additions could contribute to neighborhood quality of life.

Environmental objectives of the grant project included increasing the city's tree canopy to reduce the urban heat island effect, providing species habitat, and stormwater. It was important to find ways to measure benefits



associated from the tree planting efforts. From calculations made using iTree and the [National Tree Benefit Calculator](#), it is projected that the 500 trees planted as part of the project are likely to intercept 26,000 gallons of stormwater runoff, conserve 1,000 kilowatts of electricity, and reduce atmospheric carbon by 7,500 pounds in the first year. Upon reaching maturity, each of these trees is projected to give back \$123 in annual environmental benefits, including improvements in stormwater

management, air quality, water quality, energy saving, and CO2 emission reductions. Collectively, the tree planting efforts in this grant are expected to amount to an annual return on investment of \$61,000 in environmental benefits and ecosystem services.

While the environmental benefits of the tree planting were significant, the other main objective of the community tree planting efforts was to build citizen connections to nature and among people, specifically to



address local tensions between citizens and law enforcement officers. The tree plantings were designed to be fun and attractive to local residents, with free food and t-shirts for those who attended. Participants were also given the opportunity to name a tree with a hang tag. While children delighted in this activity, there were several adults who found meaning in naming a tree for a loved one as well.

Another aspiration of the grant was to find ways for citizens and first responders to jointly engage in a project designed to benefit quality of life in the neighborhood. Using both research and logic as a guide, the project was intentionally designed in ways that could help break down barriers to trust, and start to build constructive new relationships.

The involvement of the police and fire departments was

instrumental in this regard. At each of the four tree plantings, there were first responders on hand helping out and talking with citizens. Some residents shared that they attended because they noticed the fire trucks at their park, and wandered over to learn more. Others stopped to have their photo taken with the uniformed police officers.

Over the course of the four community events, dozens of residents and volunteers joined with first responders and city and grant partner staff to help with the tree planting effort. While it proved to be challenging to formally measure how much impact these community tree plantings had in the social equity context, it was clear from personal observation that they were well-received, and that they have the potential to be important models to consider in future such efforts.

Seeing the smile on a young girl or how the teen boys responded when the officers took an interest in them was one of my favorite parts of the tree planting events.

The second piece of the project was to develop a Tree Tenders youth training program, and hire six urban youth to learn about forestry and natural resource management over the course of the summer. Two of the city's project partners – Forest ReLeaf of Missouri and the Missouri Botanical Garden – played key roles in creating, coordinating and conducting the Tree Tenders pilot program. The youth employed as part of the STL Youth Jobs program were all from challenged parts of the City of St. Louis. In addition to learning skills that could help with future employment, each of the teens earned \$1,440 as part of their 8-week job.



The Tree Tenders gained exposure by assisting the city's Parks, Recreation & Forestry Department with tasks such as removing invasive species and watering planted trees, and also learned new techniques and skills relevant for a variety of outdoor environmental jobs. To gauge the impact of the youth experience, evaluations were administered by grant partners. Surveys developed by the [St. Louis Green Teen Alliance](http://www.stlouisgreenalliance.org) coalition indicated that the Tree Tenders increased their awareness of green jobs, their interest in learning about science and the environment, their comfort level in speaking with peers, supervisors and the general public, and their own

personal actions to help the environment in their daily lives.

The end as a beginning: The Tree Tenders were recognized with personalized Certificates of Completion, ready to explore job prospects. Having successfully developed the Tree Tenders pilot, Forest ReLeaf intends to continue the effort in the years ahead. And people, community and wildlife will all benefit as the 500 newly-planted native trees mature in these four city parks.

Resources:

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- Forest ReLeaf of Missouri. <http://more-leaf.org>.
- National Tree Benefit Calculator. <http://www.treebenefits.com/calculator>.
- St. Louis Green Team Alliance. <http://stlgreenteens.org>.
- STL Youth Jobs. <http://stlyouthjobs.org>.

Catherine L. Werner is the Sustainability Director for the City of St. Louis



Cooper Mountain Nature Park | Beaverton, OR
Photo Credit: Mennen Middlebrooks

Governing a Regional Biophilia

By Mennen Middlebrooks

Landing Amongst the Firs

Arriving to Portland via the Pacific Northwest summer sky is a marvel to behold. From a westward-bound airliner, one passes over the expanse of Oregon's High Desert, with a distinct change of landscape just west of the Dalles and Bend. The vastness of the lush green landscape becomes more distinguishable as you near landing. Forests of Douglas fir surround a never-ending stretch of the Columbia River to the North, with the Willamette and its Valley vertically bisecting the City of Roses. A visual greeting of this scale assured me that a summer filled with natural

wonder lay ahead.

I spent the months of June to August 2018 serving as an Oregon Summer Fellow, awarded by Portland State University's Hatfield School of Government. Oregon Metro's Special Projects team in the Parks and Nature Department sponsored my tenure as an Oregon Fellow, where I was quickly brought up to speed on the latest regional endeavors of equity and inclusion. My first summer in Portland with Metro proved to be one of the most immersive internships I have ever experienced, with a level of public engagement surpassing any expectation I may have had of a government agency.

While an exhaustive list of individual directors, managers and Metro staff would be fitting to include in a note of thanks, suffice it to say that these individuals truly made the difference in my summer experience. They guided me throughout my work with a true passion for innovation that was palpable. Understanding Metro's breadth of public influence and impact will help explain the foundation of their drive to serve the greater public welfare.

A Regional Biophilic Lens

Unique to Metro's regional form of government is its ability not only to preserve land for urban

expansion, but also for the designation and use of land as conservation areas, wildlife corridors and nature-rich recreational parks for the greater public benefit. The nexus of both the urban and wild realms falls under the purview of Metro's Parks and Nature Department.

For the majority of the Portland region's 1.5 million residents, the decision to foster a regionally elected government entity was one that has evolved from a series of resolutions in land use planning made by previous generations of regional Portlanders. Since Oregon Metro Regional Government's (Metro's) core formation in 1993, the vision for regional cohesion in matters ranging from urban planning and land conservation to recycling and transportation has since been overwhelmingly supported by popular vote and taxpayer finances.

Any successes and support of this regional agency have been shaped by policy and molded by the electorate through decades of ballot measures, levy & bond

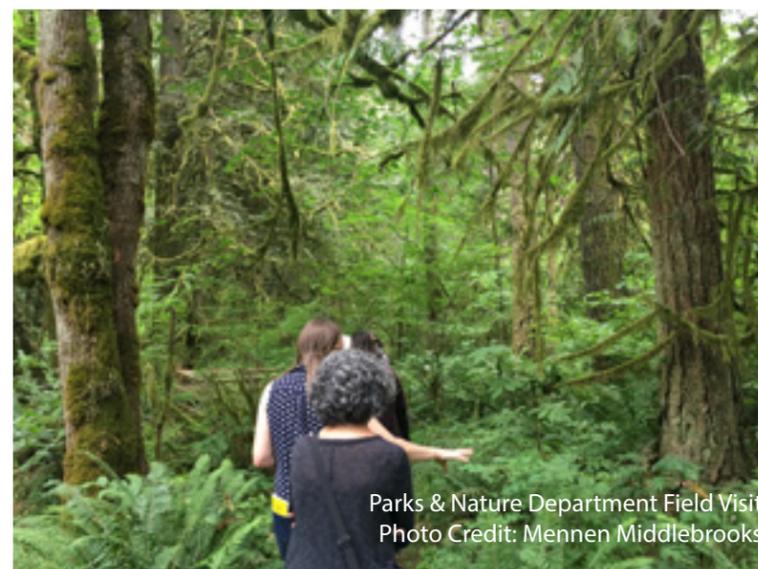
funding approval, and various forms of public engagement and insight. Metro's Council President and six district commissioners are held accountable to their districts spanning three counties, and comprised of a total twenty-four individual cities; each with their own unique demographic population, land and environmental assets, and vision for their city's future.

Key legislation has been implemented through various planning tools; utilized to sustain environmental resources and ensure curtailment of urban sprawl, leading to the Portland region we see today. The Urban Growth Boundary (UGB) is one such tool that has allowed the Portland region to expand its bounds in a controlled manner while protecting the region's natural assets since May of 1972.

Metro is also tasked with maintaining a twenty-year supply of land for the future growth of the city, effectively adjusting the UGB in a controlled manner, with approval by the electorate every five years. Since

2007, Metro has coordinated with the three counties that it represents to designate "Urban Reserves" outside of the current UGB as a means of planning for slow growth over the next half century. While land use and transportation planning comprise the foundation of Metro's regional mission, resource and wildlife conservation provide the civic opportunities and nature-oriented inspiration that keep voters and elected officials directly engaged with one another and with the land that all Portlanders call home.

Applying this level of regional governance elsewhere in the U.S. has remained a challenge in modern times. Given the unique nature of Metro's scope of land use planning and citizen-elected decision makers, there are many conservation measures that may provide inspiration to other metropolitan areas throughout the nation and abroad.



Parks & Nature Department Field Visit
Photo Credit: Mennen Middlebrooks



Smith & Bybee Wetlands Natural Area
Photo Credit: Mennen Middlebrooks

Approaching Equitable Nature Provision

The Pacific Northwest plays host to some of North America's most unique climates from the rainforests of Olympic National Park in Northwest Washington to Oregon's high desert and Pacific coastline. The Cascade Range stretches from British Columbia to California, providing many nearby cities with breathtaking views of snowy mountain peaks, vast and biodiverse riparian corridors and fertile agricultural soils. Around the time of Metro's predecessor's formation in 1979, residents of the Northern Willamette Valley ranged from newly settled urban technology experts to historically prolific timber harvesters. Though relatively demographically homogeneous in the early 1980's (the Portland metro region's racial makeup fluctuates around 75% Caucasian today), commonalities in public opinion about the region's future are shared by an informed electorate from a wide range of occupations and ethnic backgrounds. One such shared opinion is for certain: urban sprawl into natural and agricultural areas should be curtailed.

My time with the Parks and Nature Department was spent working on strategic plans for racial equity, improving A.D.A. and accessibility amenities on public park and trail sites, and a detailed review of independent thesis research on public engagement of Metro's regional land holdings. Public accountability remained crucial throughout my involvement with

these projects, and I enjoyed engaging with a diverse range of communities; from the native leadership of the Grand Ronde Tribe and various interest groups representing larger communities of color to schoolchildren and adults with mobile, cognitive and visual limitations.

Personal visits and volunteer opportunities in a portion of the 17,000 acres of Metro regional parks and trail systems provided a profound and positive experience; one that I believe was shared on the faces and in the interactions with like-minded visitors. I came away knowing that this regional government was comprised of people who cared deeply about the equity and quality of life of the citizens which Metro serves. Sustaining this level of personal engagement and public trust, I feel, is simply another factor that has spelled success in this form of regional governance, and will remain the critical human element necessary for fostering regional cohesion elsewhere.

Since the summertime, I have come back to Virginia with a notion of how an engaged regional government can help sustain for the citizens it serves. Diverse Oregonians conserving that which they love - the unique landscape that surrounds them - will help to ensure the conservation and stewardship necessary for future generations to enjoy these same nature-rich experiences.



Cooper Mountain Nature Park | Beaverton, OR



Blue Lake Regional Park | Fairview, OR



Haystack Rock | Cannon Beach, OR

Measuring Municipal Progress

Although its impetus and continued support have been promoted through unique and often culturally oriented moments in its history, Metro Regional Government serves as a sound case study to glean from as we prepare for an uncertain global future. The [2040 Growth Concept](#), originally adopted in 1995, spells out the details behind the goals of Metro's vision of Portland's regional future.

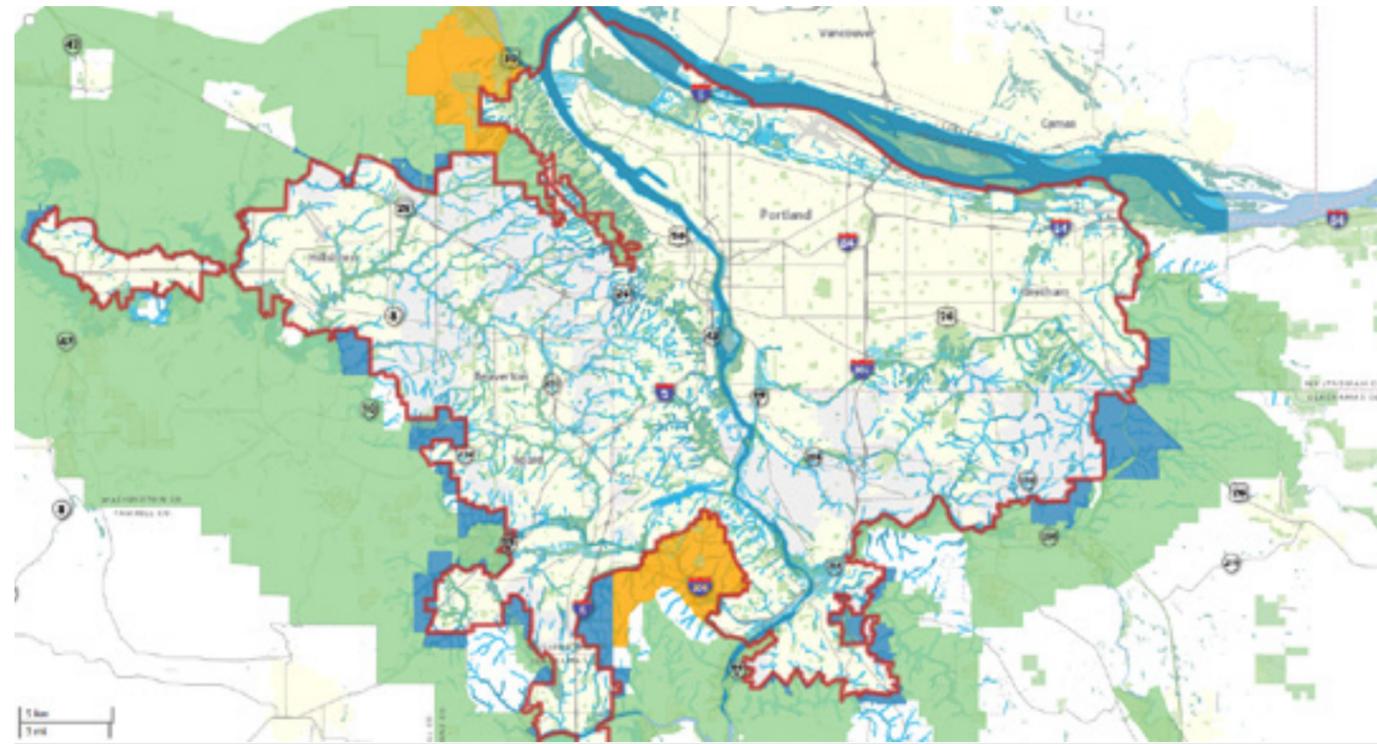
The [Urban Growth Management Functional Plan](#), last updated in April 2018, provides both binding requirements of the twenty-four cities and three counties as well as recommendations for performance standards and methods that municipalities may choose to utilize in pursuit of

well-defined goals utilized in the regional promotion of:

- Safe and stable neighborhoods for families
- Compact development that uses land and money efficiently
- A healthy economy that generates jobs & business opportunities
- Protection of farms, forests, rivers, streams and natural areas
- Publicly oriented regional park & trail planning and operation
- Allocation of funding to support individual city grant applications
- A balanced transportation system to move people & goods

It can be argued that Metro's breadth of influence serves to provide the Portland region with a form of "governmental insurance" against the

destruction of its natural resources which comprise its the urban fabric of its twenty-four cities. This need not be uniquely 'Portland' or regionally specific to the Pacific Northwest. Suburbanization and deforestation are the more visible signs of natural capital destruction; factors of growth that can be combated through more compact development and habitat-oriented environmental planning. While Metro aims to protect the Portland region from losses of habitat for salmon populations and native wildlife, other municipalities may wish to pool regional resources to combat ill-effects of sea level rise and protect their unique regional resources.



Metro
Data Resource Center
600 NE Grand Ave, Portland, OR 97232
503.797.1742 - drc@oregonmetro.gov

- Urban Growth Boundary (UGB)
- Rural Reserve
- Urban Reserve
- Unresolved areas remanded to LCDC
- Parks and/or natural areas
- Riparian Class I
- Riparian Class II
- Riparian Class III

Land Classifications of Portland Metro Region

Generated Via: [Metro Map](#)



Portland's 5 Centers for the Arts
Photo Credit: Mennen Middlebrooks



Martin Luther King Jr. Memorial, OR Convention Center

Applying Regional Change

The regional influence of both quality of life and economic vitality are values worth protecting for current population needs and safeguarding for future generations. The depletion of a state or region's natural capital has a systemic and external effect on stakeholders near and far; directly impacting the lives of citizens, visitors and consumers of the region's resources and products. While no single organization, private, public or non-profit, could ensure the complete prevention of this type of human-oriented natural market failure from occurring, a certain degree of balance could be attained through the collective cause of regional conservation policy.

While the core mission of the Parks and Nature Department is noted as "protecting clean water and restoring fish and wildlife habitat for current and future needs", perhaps alternative priorities exist when we consider the needs of an urban municipality outside of Chicago or a series of oyster-harvesting towns near Virginia's Eastern Shore. The natural resource assets and needs of

both neighboring urban and rural areas will vary greatly depending on the region we aim to review, but the needs of all regions remain largely synergistic. In the case of the local corn and soybean farmer in Nebraska who wishes to sell her produce to large-scale bulk processors and to local consumers at the ever-popular farmer's market, her wish to have an adequate supply of water for irrigation is directly tied to the environmental conditions of the Ogallala Aquifer beneath her, and the rest of the region's collective feet. Intrastate cooperation of this scale will only be fostered if equitable biophilic ideals are prioritized by the regions within a given territory.

As for the local context of this regional influence, a series of revealing questions must be posed and data-driven answers conveyed before we can successfully adapt portions of Metro's or another regional agency's practices to a city like Charlottesville or a region such as Hampton Roads... What factors are unique to the Portland region that do not exist in other states with urban growth regulations such as Boulder, Lexington, Honolulu and Seattle?

Are these regional goals and visions applicable at the smaller scale of a college town like Charlottesville, where pooled finances are more scarce and public opinion on the means of promoting conservation efforts more divided? Is the direct implementation of planning tools such as an urban growth boundary and its subsequent limitations to lot subdivision or available affordable housing the most fitting way to promote a sustainable city and limit urban sprawl?

The answer to these posed questions can and will be determined by current generations both in the U.S. and abroad. The heightened scale of collective regional and state actions will be critical in promoting the on-ground implementation of meaningful climate policy and environmental regulations that affect the lives of both the urban and rural citizen.

Mennen Middlebrooks is Director of Graphic Design for the Biophilic Cities and a Masters Candidate in the Department of Urban and Environmental Planning at the University of Virginia School of Architecture



Trillium Park | Toronto, ON
Photo Credit: Tim Beatley

Trillium and Cully Parks: Engaging Deeper Place Histories

By Tim Beatley

Portland, Oregon, and Toronto, Ontario, offer wonderful recent examples of the positive trend in engaging the stories and deeper history of native peoples in the design of urban parks.

[Cully Park](#) in Portland is the story of the transformation of a former landfill in a neighborhood of color in Northeast Portland into a wonderful new park. Extensive neighborhood engagement was a key goal undertaken with the assistance of local nonprofit [Verde](#). Social justice was a strong motivation behind this park. A former quarry and later a landfill, the park at once satisfies the need to clean up a contaminated brownfield site, and the need for a park in a very underserved neighborhood. According to Tony Defalco of Verde: “This is a story about transforming a site that was put into a low-income neighborhood as literally a

dumping ground.”

Verde did much of the fundraising for the park, with matching funds provided by the city. The design and planning for the park was marked by an unusual degree of community involvement, including monthly meetings of a community involvement committee and extensive efforts to facilitate participation (providing childcare and transportation assistance for meetings for example, and even stipends given to participants in recognition of the value of their time). Part of the park is a community garden designed by 7th and 8th grade students who actually had to present their design to the community. The Cully Park process reflects the city’s commitment to a new partnership model, not simply consulting the community but giving them real power and

involvement in its design. The hiring process for construction of the park also reflected a commitment to the community: 70% of the contractors doing the work on the park were minorities and women.

The park is also unusual in the extent to which the Native American community was consulted and involved. Its final design reflects the intent for Cully Park to be a major Native American gathering space. The most prominent feature of the park is a Tribal Gathering Garden: a place for ceremonies, for teaching, and to grow important medicinal plants. [In the words of Judy Bluehorse Skelton](#) (Nez Perce/Cherokee): “This is an opportunity for our community to come back to this place ... that healing ... to reclaim the relationship we’ve always had with the land.”

Cully Park is a spectacular new park with playfields and walking paths that will help to fill the neighborhood’s void in nature and parks. As Defalco says: “What we heard was you’ve got to be able to come to a place where you can look up and see the sky and see the mountains.” The views from this elevated park are magical: on clear days you can see Mount Adams and Mount Hood.

What is perhaps even more remarkable is the way Portland’s Parks and Recreation Department has formalized their relationship with the Native American community, specifically through the [Native American Community Advisory Council](#) (NACAC). The stated mission is “to bring about a healing between Indigenous/ Native American peoples and all others who live in this region, recognizing that the people are one with the land and consider themselves stewards of it and participating in the well-being of the land.”

Another important example of a new urban park that tells a deeper, more inclusive story is Trillium Park in Toronto, Ontario. Trillium Park and the William

G. Davis Trail were created on the site of a former parking lot on the shore of Lake Ontario. I spoke recently with Walter Kehm, landscape architect and senior principal with the firm [LANDinc](#) that designed the park, about some of its remarkable features and how it is being received by the residents of Toronto.

As Kehm explains, this is an unusual park for its efforts at incorporating the history of First Nations. From the beginning, local members of Mississaugas of the Credit First Nation, the traditional inhabitants of the land on which Toronto lies, were engaged in the design process in an effort to include this history. “Walk Gently on the Land” became the park’s theme, a reference to the importance of the ancient pathways and seasonal migrations to First Nations. The shoreline site of the park was an important ceremonial destination.

Several unique features reference this walking history. Kehm asked Mississaugas members what would be the most symbolic representation. Kehm also consulted closely with a former Mississaugas chief, Carolyn

King, who had been influential in creating a provincial school-based program, called the Moccasin Identifier Project, that challenged kids to learn about the history and culture of First Nations. In the end, the park contains three large carved moccasins, the particular style worn by the Mississaugas, each fifteen feet high.

The park’s moccasins are a stone version of the more ephemeral versions that have been stenciled by kids in schools throughout Toronto “to remind people that we are on the traditional territory of indigenous peoples,” [says King](#).

A second reference in the park to the walking heritage of First Nations can be seen in one of the most interesting features of the park, its three so-called “marker trees”. The Mississaugas intentionally bent and trained tree limbs to create a network of directional or marker trees --trees that would guide the way. Many of these are still living, but Kehm wanted to grow and plant some new examples of these trees in the park.

An [article about the new park](#) notes that the park is both



Photo Credits: Tim Beatley



modest and spectacular: “There are no toys here: no playground, no sports fields.” But there are extensive boulders and rocks. “People of all ages like to climb these rocks,” Kehm told me. There are other impressive features, including a sacred fire pit and circle, very near to Lake Ontario’s edge.

He has been especially keen to see the ways in which kids create their own play stories in this interesting and richly textured environment. This is not a passive park, but one that challenges visitors to be active and to physically engage. There was a recent group of five kids he witnessed cooking imaginary pancakes on the flat surfaces inside a cave. At one point, he joined in to help them find some syrup. “How to describe all this,” he pondered. “You don’t need Disneyland; they’ve created their own Disney.” That seems to be the essence of a good park; setting the physical and natural stage, and creating the conditions for play and imagination. Adults can also have fun, and there are places where rocks can be stacked into towers of infinite variety. The photos Kehm sent me later were quite telling--and quite impressive for the variety of stacks of stones.

Kehm visits the park frequently to observe and is often happy with what he sees. He often engages the visitors he sees in conversation. I get the sense that this is a personal version of a post-occupancy study, an informal but very informative way for Kehm to get a sense of what features of the park are



Photo Credits: Tim Beatley



working. It all seems to be working. He is especially impressed with the ways in which visitors have taken over the site, he says, and made it their own.

Kehm related one especially interesting recent conversation he had with an elderly woman visiting the park. She was a retired nurse who had moved back to Toronto after a career living at Cambridge Bay in the high arctic. It had been a hard adjustment, one marked by

depression. Discovering and visiting Trillium had been a godsend for her, a kind of “magic” she told Kehm. She explained that she lived in a 600 square foot condo that looked down onto a parking lot. She spoke of the powerful smells of the hemlock, pine and spruce at Trillium: “the smell alone is healing,” she said. Then she came to the water’s edge and saw the birds and the water lapping and she said ‘I’m now at home.’”

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[View the New Biophilic Cities Film about Cully Park](#)



Boulder Outcropping
Photo Credit: Tim Beatley



DEC Raingarden Installation Team
Photo Credits: PUSH BLUE

PUSH Blue: Developing an Equitable Green Economy in Buffalo

By Ken Parker, PUSH Blue Program Manager

The 477-square-mile Buffalo River watershed includes waters flowing from the Buffalo River and its tributaries into Lake Erie near the head of the Niagara River. The watershed is widely used by City of Buffalo residents and visiting tourists for sport fishing, sailing, kayaking, swimming, environmental education and other recreational uses. It is also an important stopover habitat for migratory birds.

The watershed, however, has a history of heavy environmental stress from development

and industry in steel, grain, and chemical production. Furthermore, industrial waste was dumped directly in the river leading to the Buffalo River being named one of the most polluted waterways in the nation. These histories merge with the more current effects of contamination of the Buffalo River and surrounding watershed by antiquated Combined Sewer Overflow (CSO) stormwater management systems in the city. The BSA is currently under an EPA consent decree to significantly reduce CSO waste by implementing its \$400 million

plan to reduce overflows, of which \$90 million is designated for green infrastructure projects.

A critical partner in the city's effort to improve the health of the watershed is [People United for Sustainable Housing \(PUSH Buffalo\)](#); a local membership-based community organization with a mission to mobilize residents to create strong neighborhoods with quality, affordable housing, expand local hiring opportunities, and advance economic and environmental justice in Buffalo.

Improving local water quality is a core part of that work, and PUSH has addressed that through growing its role in developing regional green infrastructure. In 2013, PUSH launched PUSH Blue Eco Landscaping ([PUSH Blue](#)) to create a variety of storm water retention interventions throughout PUSH's Green Development Zone on Buffalo's West Side – directly adjacent to the Niagara River, which flows from Lake Erie to Lake Ontario. The Green Development Zone is PUSH's thirty-block place-based just transition strategy that leverages community organizing, community control of land, affordable housing development, weatherization investments, job training, and revenue generating social enterprise activities as a means of building community wealth and enhancing resiliency.

PUSH Blue is a team of stormwater mitigation and outreach specialists that are on the forefront of the community-

based water management movement. The team has completed more than thirty stormwater interventions on property it owns in the Green Development Zone that include rain gardens, permeable pavers, living roofs, bioswales, and underground and above-ground cisterns.

Due to PUSH's extensive experience in completing water management projects on vacant urban land, the BSA included PUSH's work in its plan to reduce overflows. PUSH also partnered with the BSA on its Community Water Partnership Program, which included PUSH Blue's completion of over 140 bioretention installations on nineteen acres of vacant lots across the city and a scaling up of its green infrastructure division, providing expanded opportunities for both training and permanent placement of successful trainees. Through its comprehensive sustainable

landscape and green infrastructure training programs, PUSH Buffalo is a community leader working to address stormwater challenges while also creating good green jobs accessible to Buffalo residents.

As part of PUSH Blue's continued commitment to the green job workforce, during the summer of 2018, PUSH established a training program in collaboration with the [National Green Infrastructure Certification Program \(NGICP\)](#). PUSH now offers regional trainings to certify others under this national standard. PUSH's workforce currently employs three experienced and certified NGICP professionals, who are currently the only certified individuals in Western NY. Program Manager Ken Parker is one of twenty-one people in the entire country, and the only person in New York State, who is a NGICP trainer. PUSH Buffalo is committed to developing the most skilled and



NGICP Instructive Session, Nov. 2018
Photo Credit: PUSH Blue, Buffalo

knowledgeable individuals in the field of green infrastructure. Through its training program, PUSH hopes to expand the number of people in the region certified and trained in green infrastructure.

In order for Buffalo, and other cities, to successfully implement green infrastructure projects, the city needs a skilled workforce to implement these systems. The NGICP certification offers a training pathway for workers to access skills, contractors to find the most skilled individuals to hire, and property owners to know that those installing and maintaining their systems have the necessary skills to complete the work. Training Buffalo residents for these jobs also helps ensure that the dollars spent on green infrastructure stay in the city and its economy, as well as provide opportunities to those who have borne a disproportionate share of the

burden of water pollution. Such work also builds the region's capacity to continue building and maintaining this infrastructure.

The best plans and the ones with the highest likelihood of success build on the assets currently available and address the daily needs of those currently living in our communities. Over the last several years, PUSH has worked to develop a vision for an equitable green economy anchored by new public and private investments in green jobs and sustainable technologies. The PUSH Blue project proposes strategies that meet these local needs, reinforces the positive work that has been going on for several years, and works toward building comprehensive and sustainable neighborhoods with opportunities for all who live here. Such investments, at a neighborhood scale, provide spaces for innovation in green infrastructure and use of new

technologies, demonstrations of techniques and technologies that will be replicable throughout the region, and help to address the significant stormwater challenges so many of our communities face.

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A Building That Blooms

By Tim Beatley

It would be a good thing if more buildings in cities would “bloom.” That is what Oasia Hotel Downtown does, a new twenty-seven floor high-rise in Singapore. It is another remarkable biophilic building designed by the architecture firm [WOHA](#) (Wong Mun Summ and Richard Hassell), and replaces ground level nature by some 1100%. There are four skyparks, including one on the 12th floor check-in level. Because of the structural design of the high-rise, with elevators and structural members on the corners, these skypark levels give the feeling of being wide open. In the case of the 12th floor, there is a commons in the center with trees, bushes and plants wrapped around it, and lovely couches, chairs and tables organized in sheltered clusters. There is, at times, quite a breeze on these open floors and Wong explained the priority given in this structural configuration to cross-ventilation. As a result, these open public areas are not mechanically cooled and in fact are substantially cooler than street level sidewalks. By far the most spectacular element of the structure is the nearly-complete mesh façades on all sides of the building that accommodate twenty-one different species of flowering climbing vines, chosen to ensure that something is always in bloom. There is no mistaking the building from a distance and the flowering façades help to cool and reduce the building’s energy needs.



Oasia Hotel Downtown | Singapore
Photo Credits: Tim Beatley

Oasia Hotel, Singapore
Photo Credit: Flickr | Bill and Dessa Barnes



Old Town Tallinn
Photo Credit: Maria Tahamtani

Pigeons in Tallinn and Turtles in Tartu

By Maria Tahamtani

When visiting Tallinn, Estonia, I expected to be met with the magic of the Christmas Market, to be entranced by the medieval fairytale atmosphere that dominates its Old Town, and to feast on a variety of hearty foods such as hand-stuffed meat pies, grilled game sausages, and ox soup served in traditional clay bowls. I also expected to feel the history underfoot, and to walk where courageous men and women of the small Baltic country once stood, displaying their quiet power in the effort to regain independence from the

Soviet Union through a peaceful revolution of unified song. However, on my first journey along the narrow, winding cobblestone pathways that meander through much of the city, the one thing I could never have expected was perhaps the very thing that made me smile the most: large pigeon sculptures repeatedly and strategically placed in the streets of Tallinn. The first time I came across a couple of the birds, I watched as a few small children who, no taller than the pigeons themselves, danced and played

on the backs of the sculptures, jumping on and off of them and running in between them, as if they were playing hide-and-seek. Content with these concrete reminders of nature, I smiled and walked on. They were, after all, a pleasant surprise and a sweet addition to the storybook quality of Tallinn. However, the further along I walked, the more sculptures I noticed and the more I began to question their purpose. It took gaining a familiarity with the whole city to finally understand that these pigeons were not decorative nor



Tallinn, Estonia
Photo Credit: Maria Tahamtani

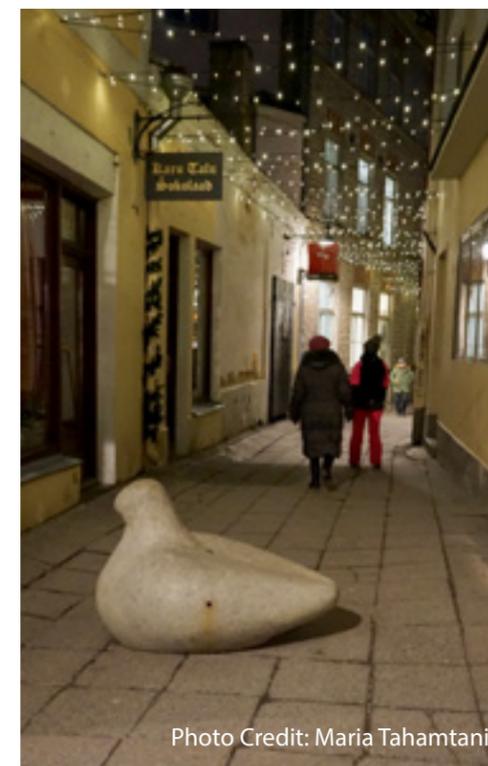


Photo Credit: Maria Tahamtani



Photo Credit: Maria Tahamtani

a temporary art installation, but in fact served a unique purpose within the city. As it turns out, the birds act as concrete barriers to vehicle traffic on certain streets and street corners throughout the capital city.

Tallinn commissioned local artist Seaküla Simson to create the original ninety-seven birds which were installed beginning in 2006. While over subsequent years some of the birds have been moved so as not to block the most efficient delivery routes for products and services, the spirit of the pigeons remain a testament to the ability of a city to keep nature front-and-center in the most unexpected of ways. Simson was given free reign when it came to choosing the animal that would be so prominently featured, but said he chose pigeons simply because they are, and have always been, such a prominent part of everyday life in Tallinn.

Reinforcing the nature that is already so much a part of the culture of the city through these traffic barriers is not unique to Estonia's capital. Just about every major city in Estonia also commissioned the creation of some sort of natureful traffic barrier that would be distinct to their cities. As a result, visitors will find large sculptures of turtles in the southern city of Tartu, large strawberries in Vilijandi, and small polar bears as part of the landscape of the city of Jõhvi.

In fact, nature permeates the streets of Estonia and the lives of those who call the country home



Children Playing Among the Pigeons in Old Town, Tallinn
Photo Credit: Maria Tahamtani



Turtles in Tartu, Estonia
Photo Credit: Cheryl Rofer



Cranberries along the Jõhvi Promenade
Photo Credit: zakrit_dver, Live Journal

in more creative ways than one. Walk along the Jõhvi promenade, for instance, and you'll be instantly surrounded by the larger than life cranberry seating and lighting that were inspired by the moniker "jõhvikas," a word which not only means a resident of Jõhvi but also means "cranberries" in Estonian. Explore historical Old Town Tallinn instead, and you'll most certainly come upon expanses of trees interspersed throughout the city around which parks have been created, along with wide street medians that provide more space for nature to flourish. This comes as no surprise, however, for a country which boasts that half of its land area remains forest, while another fifth of the land is preserved as national parks and nature reserves.

This past year, the [Republic of Estonia celebrated the 100 year anniversary](#) of its independence. As part of their year-long continued celebration, the country also took the opportunity to define its future, proudly unveiling the "[Estonia 100 Hiking Series](#)" in order to reacquaint residents with the wondrous nature in their own backyard. Estonia wanted its residents to know that natureful experiences like these need not require travel outside the country's borders. The hiking series featured an experience suitable for just about any resident, including both traditional hiking and more water-based adventures via kayaks and canoes, along with "nature observation, mushrooming and berry picking hikes, car and other motorised vehicle hikes and

also kick-sled and skate hikes" throughout 2018. In parallel, the Environment Department of Tallinn concluded its two-year long effort called [NATTOURS](#), which they led jointly with the City of Helsinki, Finland, to provide more opportunities for nature tourism and education among the two closely linked cities. This environmental-tourism based effort included many technological innovations, supplying residents with easy access to educational information on all objects of nature in the two cities, as well as maps and GPS-guided nature tours for residents and visitors alike.

I was fortunate to be among the masses of excited citizens gathered in Tallinn's Freedom Square counting down from 100 with Estonia's President to welcome in the 2018 New Year. What I didn't realize then, in that moment, however, was just how meaningful that countdown would be for a country that is continuously advancing toward its future of green.

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Maria Tahamtani is Partner City Coordinator for the Biophilic Cities Network, Founder and President of the University of Virginia's first Biophilic Student Organization, BiHOophilic, and a Master of Urban and Environmental Planning Candidate at the University of Virginia.



Garden Porch of UVA's Colonnades Club
Photo Credit: Maria Tahamtani

The Future of Cities is Biophilic and Inclusive: An Interview with 2018 AIA President Carl Elefante

By Stella Tarnay

Biophilic Cities Network Founder Tim Beatley and Biophilic DC Co-Founder Stella Tarnay met with American Institute of Architects (AIA) President Carl Elefante FAIA, FAPT, LEED AP in October 2018 on the garden porch of UVA's Colonnades Club to explore connections between architectural practice and biophilic cities, and to discuss President [Elefante's forward-looking speech at the AIA Conference on Architecture 2018](#), in New York City.

Stella Tarnay: At the AIA Conference in New York you talked about a new blueprint for cities. You also talked about an architectural revolution of relevance. What was it that drew you to the city scale?

Carl Elefante: At one level it was pretty basic. We were in New York City. Having the opportunity to address architectural issues from within the living laboratory of New York and at its scale was an easy choice to make.

But there's another aspect to it. Looking out, we have a global awakening to the importance of shaping cities to shape human culture, to shape human society, to shape the economy, to shape the environment. As you know humanity is now more

than 50 percent housed in cities and by the end of the century, almost nine out of ten people are projected to live in cities. So, human destiny is tied to the shaping of our cities. We're going to create these conditions for essentially all humanity. What are the conditions that we need to make that work? For people to survive and thrive? And frankly, architects have to stop just talking to each other.

Stella Tarnay: Tim, as a planner you're used to thinking at the city scale. But what do you think about the role of architects for biophilic cities?

Tim Beatley: I think there's a lot of potential. And some great individual examples. Singapore comes to mind. The Oasia highrise hotel there is a

living, biophilic building in just about every sense, even though it's not Living Building certified. It replaces ground level nature 1100 percent. That is really remarkable. Twenty one different species of flowering vines grow on its planted facade. I've had conversations with its designers and in particular Wong Mun Summ of WOHA, who likes to talk about designing the facade for squirrels, which is sort of funny. But he also talks about creating a living city through a network of green roofs, sky gardens, and vertical facades. When we talked last, he said to me: you planners are not thinking much in the three-dimensional way. You're not thinking about how building design can contribute to a larger urban goal. And he's probably right.

Stella Tarnay: At the AIA Convention, Helena Van Vliet, founder of DC's sister project, BioPhilly, talked about the potential of cities as multi-species habitats. Where we no longer think of cities as just healthy places for people, but for multiple species in the urban environment. How does an architect's work change when we start thinking about cities in this way?

Carl Elefante: Well first, we're not doing a good job yet designing for the human species. We need to address that. Recognizing that we're biological creatures, that we're part of nature, and that we're not better being taken OUT of nature, rather we're better being IN nature. The second species that's starting to be thought about is birds. Because our cities today are annihilating birds by the millions.

Tim Beatley: It's great to see places like San Francisco adopting bird-friendly standards, so it's out there. But I don't see a lot of emphasis on it in the architectural curriculum, or in the profession. Not much emphasis on designing buildings with birds, and other species in mind.

Carl Elefante: So, let's make it part of education. Education is such a good place to start. And let's make it part of code. This is a great example of how architects can be part of the relevance revolution.

Tim Beatley: In your quite wonderful AIA talk you referenced City Beautiful, which I thought was interesting. We don't always invoke that idea, that history. Can you elaborate on it a bit?

Carl Elefante: That reference expresses everything good and everything bad about it. It's a bit of a cautionary tale. In the past, architects have looked in the mirror and said, our job is to make a wonderful place for everyone. Our job is to create beautiful cities. So who were those people and what was their image? They were extremely privileged with a definite sense of manifest destiny of the white man. That's the world they came from. There were certainly some who were culturally and intellectually beyond that, but the mainstream was about the great white hope and hey, let's put Roman columns everywhere. So that's the cautionary tale. We are now 21st century citizens, not 19th or 20th century citizens. We don't need to create the City Beautiful 2.0. Because that's not

the right model. Let's find the right model. Our challenge is the same: to create cities that are wonderful places for everyone.

Tim Beatley: To quote you: "Cities that are beautiful, inspiring and joyful." But you got your biggest applause when you talked about inclusivity, and the architectural profession rising to that challenge.

Carl Elefante: Right. AIA has actually been doing a lot of work on gender equity and equitable practice. About how we support and promote firms that are adopting equitable practice modes. AIA's membership was energized by the Me Too movement. We were able to catch that wave and advance AIA's equitable practice agenda. And frankly, we really need to do that.

Tim Beatley: Let me ask you more directly about biophilic cities. Can you say more about the role of nature in that future-looking vision of cities?

Stella Tarnay: And another quote from your talk that I like: "Cities as part of ecosystems, and inspired by nature." I thought that was beautiful. What did you mean by that?

Carl Elefante: I think the move to biophilic cities is the most fundamental mode change that is required for us to create the 21st century city. I see three dimensions to it. First, people are biological creatures. We live in nature, whether it's a built nature that people created, nature that nature created, or somewhere in between. We're finding out more and more about how much impact people have had on their natural settings over the millenniums. I mean, here we are in this historic University of Virginia landscape that is completely human-created, with natural elements. Yet it works in that biophilic way. Architects are beginning to understand, and perhaps rediscover, how that can work in places like hospital settings, for example. How to make people feel better through design.

Second, nature needs us to be thinking about it when we design our cities. We're still in that "doing less bad" mode, when we actually need to be in a regenerative mode, to design buildings and cities that are good for the environment.



Carl Elefante, 2018 AIA President
Photo Credit: Carl Elefante



Oasia Hotel, Singapore
Photo Credit: City-Reader

There's a lot of thinking going on about how to make cities carbon sequestering, rather than just carbon neutral. That's good. How cities can be part of the solution. Not just less of the carbon problem. We were talking about multiple species. We can design for that with green corridors. And how about better water quality cities? We can design for that. And how about better air quality cities? Let's plan for the opposite of heat island effect. Those are all design challenges and it's perfectly reasonable for us to say we should expect that of our built environment.

Singapore is a great example, to create a tropical forest equal to the tropical forest that was there.

The third dimension is of looking to nature as our model. Nature as our mentor in designing the built environment. To understand how nature designs and to bring our industrial model and nature's growth models together. And to understand that nothing is really separate.

Tim Beatley: And thinking about how to integrate these agendas for carbon neutral, resilient cities and what we call biophilic cities. There are so many labels going around, it's a bit of a challenge.

Carl Elefante: I think that they can be advanced at the same time, and they have to be advanced at the same time. We can't work in silos. We can learn a lot by looking in the past, and how people solved problems regionally, in their own environments.

Tim Beatley: That reminds me in a specific way of the house I grew up in. It was designed to catch the breezes, and didn't have air conditioning. If you got too warm, you moved to another part of the house that was cooler. That experience of thermal change was a source of sensory pleasure. We have a world where the built environment is designed so there aren't many opportunities to experience that, to feel those sensations.

Carl Elefante: Right! The current design standard of comfort for constant humidity and temperature year-round is nuts. I don't think it's good for us. You know, I'm outside and it's 95. I come inside and it's 65. Our bodies aren't designed for that. At the Center for the Built Environment at UC Berkeley they've been doing research on this and they suggest there are more like 60 data points for human comfort. You know, is there air flow, where is the airflow? Is it on your feet, is on the back of your neck? Is there radiant heat and cooling? Looking at how we function as biological beings rather than these theoretical six-foot cylinders in engineering calculations.

Tim Beatley: One of the things I like about Singapore's Oasia building is that the lobby is open air, without air conditioning. And it works.

Carl Elefante: The three of us here, we're in a perfect situation right now. We're sitting on the back porch of this historic building next to garden and trees, and every once in a while the breeze picks up. I mean, it's a delight to experience.

Stella Tarnay: I'd like to address cultural and professional connectivity. For me, as a civic organizer for biophilic practices in Washington, I have found the Biophilic Cities Network really helpful in connecting me with peers who are also innovating. I'm curious about how you think the Biophilic Cities Network can support architects who want to be active in designing for biophilic cities?

Carl Elefante: I think that it's a missing element in the architectural discussion. It would be great

to think about that through the Committee on the Environment at AIA, and some of the other committees. For example, materials, and resiliency. And design for health. But it should include biophilia as a much more central discussion rather than sort of a sub-topic of design and health.

Tim Beatley: Biophilic design does seem to be a concern for interior spaces. Looking at the numbers of articles about biophilic office space design, can we leverage that? Can we go the next step and get architects to think about the neighborhood and the city? To extend the sensibility of having nature in your office to the larger context?

Carl Elefante: That kind of indicates that you always need an economic driver. In the case of corporate offices, you have worker productivity; you've got people who are willing to invest capital funds into what ultimately will help them retain talent and help that talent be more collaborative and creative and productive and so on. For the same thing to be created in our cities, we need policies and programs, extending to the regional level, to support that.

Carl Elefante FAIA, FAPT, LEED AP is a Principal of Quinn Evans Architects, and served as the 94th President of the American Institute of Architects in 2018.

Stella Tarnay is the Co-founder of Biophilic DC and Executive Director of Capital Nature, a nonprofit dedicated to bringing nature experience into the lives of Washington DC area residents and visitors. Stella can be reached at stella@capitalnature.org.

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Mauerpark (Berlin) Playground
Photo Credit: Jbdrm

Designing Equitable Biophilic Cities

By Julia Triman

The research literature on inequitable access to nature in cities is well established (Wolch et al. 2014, Nesbitt et al. 2019). Recent work is also charting paths towards tangible solutions that might simultaneously make cities more equitable and natureful. From re-imagining former military infrastructure to creating freeway cap parks, researchers are exploring many possible avenues to increasing equity and designing urban nature connections at the same time.

In “The ‘Green Belt Berlin,’” Ingo Kowarik examines adaptive re-use of former military structures in cities, in particular the Berlin Wall (Kowarik 2019). Kowarik describes how military installations, such as the Berlin Wall, often are associated with traumatic experiences

and collective memories that may have highly charged and painful associations. Emerging in the years following the fall of the Berlin Wall, Green Belt Berlin is a multi-functional greenway running along the northern section of the former border between East and West Berlin with some established parks and connections and other features still in planning and design phases. Kowarik’s research examines planning and development processes for the greenway, and emphasizes how the existing and planned features of Green Belt Berlin increase equity in the distribution of green space for local residents. One way this is possible is through the distributed nature of the greenway: neighborhoods and blocks immediately flanking Green Belt Berlin have mixed socioeconomic status, and the

vast majority of them presently are rated as not having high per-capita green space relative to the rest of the city. The mix of types of spaces currently offered and planned are intended to meet a variety of demographic and cultural needs, providing a good example of a project developing over many years to suit a wide range of city dwellers.



Klyde Warren Park (Dallas)
Photo Credit: Carol M. Highsmith



Denver Central 70
Photo Credit: Colorado

Another biophilic strategy with the potential to foster outcomes is the introduction of cap parks across freeways and highways. Though not a new practice, Douglas Houston and Michelle E. Zuñiga conducted the first comprehensive study of existing and planned freeway cap parks, which indicated that both those in place and planned have significant implications for increasing park access for underserved areas in cities (Houston and Zuñiga 2019). The authors conclude that cap parks may have a significant role to play in advancing environmental justice in cities by their ability to reconnect communities currently divided by cavernous freeways, reduce the incidence of noise and air pollution, and mitigate disparities in city-wide park access, size, design, and quality. Houston and Zuñiga discuss that while Klyde Warren Park in Dallas, Texas ameliorates the ways the construction of the freeway displaced and disconnected African-American and Mexican-American people and communities, the park is still implicated in economic and growth-driven planning practices without equity as the primary concern.

In contrast, they discuss how community members were continually consulted during Denver’s proposed I-70 cap park planning process (called “Central 70”), and though not a perfect example, includes specific measures to reduce pollution, increase connectivity, and provide community space appropriate to the needs of the people who live there.

Re-use of former military installations and the design and creation of freeway cap parks both have demonstrated potential ecological gentrification as well as planning processes that have varying degrees of inclusion and responsiveness to vulnerable communities and community members. Creative re-use of the former Berlin Wall presents an opportunity that other cities might follow to increase urban nature connections in a variety of ways along a transect of different communities, with sensitive solutions that fit each particular place. Freeway cap parks offer potential for re-connecting people and communities that were quite literally demolished and torn apart when the roads were initially constructed.

While neither design solution is the single key to more equitable biophilic cities, this recent research highlights the strengths and possibilities of each of these ideas, and suggests complexities that planners and designers might consider when implementing these sorts of projects to increase equitable outcomes overall.

Julia Triman is Director of Biophilic Research for Biophilic Cities and a Ph.D. Candidate in the Constructed Environment at the University of Virginia School of Architecture

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Tanner Springs Park (Portland)
Photo Credit: Ramboll Studio
Dreiseitl

Palaces for the People

Review By Lucia Shuff-Heck

Often when we think of infrastructure, our minds jump to transit, roads, bridges, and the other hard infrastructural elements that make up our cities. These systems are necessary components of a network that keeps our daily lives running smoothly. Equally important, however, is a slightly more abstract concept: that of social infrastructure. *Palaces for the People*, by Eric Klinenberg, explores this concept, through its history, and its effect on schools, neighborhoods, libraries, and other elements of public life.

Klinenberg argues that we have neglected social infrastructure to the detriment of our communities. The idea of the “third place,” or space to gather outside home or work, has persisted as a requirement for a vital and thriving public. Unfortunately, despite numerous benefits, the amount of free and accessible public space has been in decline. Many of the public spaces in cities are privately owned businesses, such as coffee shops and restaurants, and thus are not ideal gathering spaces, as they require payment for access. Meanwhile, publicly funded institutions, such as the library, are the first to be subject to cuts in the city budget.

Biophilia also factors into Klinenberg’s vision for creating more equitable, healthy spaces. Klinenberg highlights the Philadelphia initiative

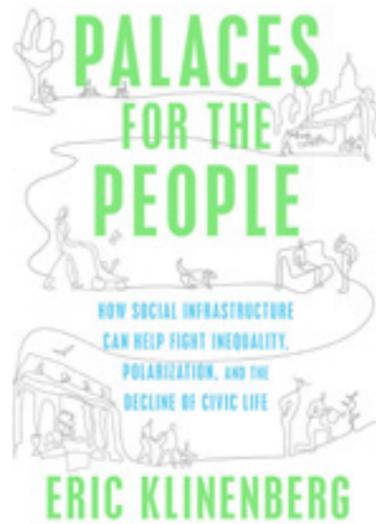
to remediate vacant lots in lower-income pockets in the city, an effort which has noticeably reduced crime and created healthy, maintained green spaces for communities that have traditionally been marginalized in the exploration of greening initiatives.

Attention to social infrastructure can also be incorporated into the more material projects that are desperately needed to address the growing threat of damage from climate change. This includes plans such as Kate Orff’s Living Breakwaters project, as well as Singapore’s attention to public spaces designed to respond to water inundation.

Palaces for the People is a comprehensive, in-depth look at how communities benefit from shared space, and even how it can increase resilience in the wake of disaster. Through the lens of interconnection, Klinenberg explores how prioritizing social infrastructure can benefit our cities, communities, and enrich our individual lives.

Eric Klinenberg (2018). *Palaces for the People*. New York: Crown.

Lucia Shuff-Heck is a Communications Coordinator for Biophilic Cities, and an Undergraduate Student majoring in Environments and Sustainability at the University of Virginia Department of Global Studies



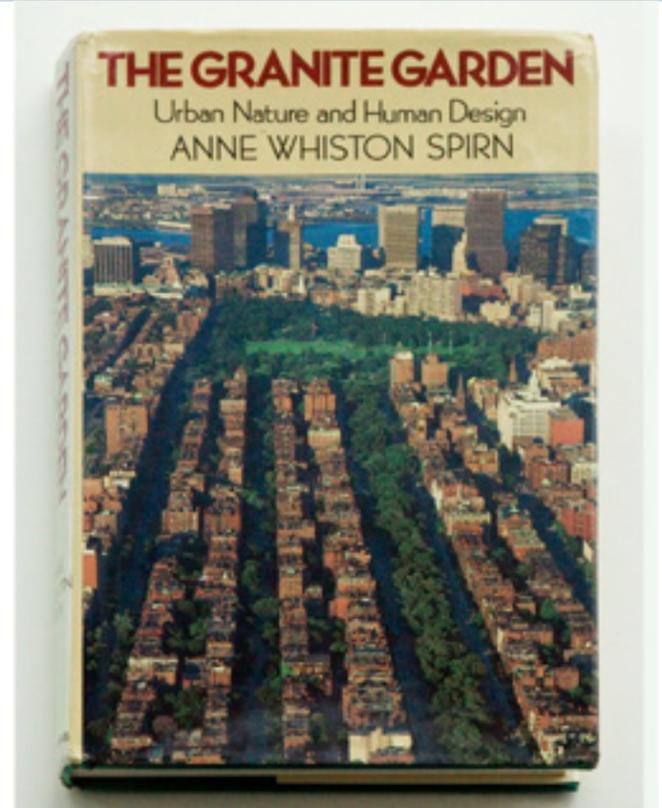
Weathering the Decades with Wisdom

Review By Jamie Trost

Three and a half decades on Sprin’s work remains instructive and relevant

Thirty-five years after its initial release, Anne Whiston Spirn’s *The Granite Garden: Urban Nature and Human Design* reads with a wisdom that seems as timeless as the elements of air, earth, and water the book is framed around. A series of contemporary case studies lands the book squarely in the early 1980s, but the underlying reasoning for much of Sprin’s nature-based urban design has roots in sources as ancient as the Bible, Hippocrates, and the Code of Hammurabi. The infusion of modern science and age-old custom gives *The Granite Garden* the holistic, tactical feel of the *Art of War*. As Sun Tzu says of battle, Sprin echoes in city planning—“Know the ground, know the weather; your victory will then be total.”

Chillingly, many urban and environmental strategies advocated in *The Granite Garden* seem to have gone largely unheeded in the ensuing decades. This seeming neglect of good advice, combined with the divergent, science fiction-esque visions of the “Infernal” and “Celestial” Cities of the future Sprin closes the book with, give the book the ominous feel of a dark prophecy. But hope is inspired by the fact that, however late, many of the natural design elements Sprin suggests are appearing in cityscapes. Perhaps the more recent research on the psychological effects of nature on humans has compelled a re-visitation of the more environmental and physiological focused planning *The Granite Garden* proposed. In any case, there’s still much to be done, as Sprin herself lamented during a [2015 interview in The Dirt](#), “We need to truly reimagine the way we design cities.”



Resources:

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Jamie Trost is a Communications Coordinator for Biophilic Cities and a Graduate Student in the Department of Urban and Environmental Planning at the University of Virginia School of Architecture

Remembering Mary Oliver

By Tim Beatley

The Black Walnut Tree
by Mary Oliver©

*My mother and I debate:
we could sell
the black walnut tree
to the lumberman,
and pay off the mortgage.
Likely some storm anyway
will churn down its dark boughs,
smashing the house. We talk
slowly, two women trying
in a difficult time to be wise.
Roots in the cellar drains,
I say, and she replies
that the leaves are getting heavier
every year, and the fruit
harder to gather away.
But something brighter than money
moves in our blood – an edge
sharp and quick as a trowel
that wants us to dig and sow.
So we talk, but we don't do
anything. That night I dream
of my fathers out of Bohemia
filling the blue fields
of fresh and generous Ohio
with leaves and vines and orchards.
What my mother and I both know
is that we'd crawl with shame
in the emptiness we'd made
in our own and our fathers' backyard.
So the black walnut tree
swings through another year
of sun and leaping winds,
of leaves and bounding fruit,
and, month after month, the whip-
crack of the mortgage.*

Discovering Mary Oliver opened up a remarkable new dimension in my life, as it did for many others. Oliver passed away on January 17, 2019, leaving an immense literary void for many of us who relied on her inspired stanzas for a measure of insight and hope.

Poetry is, Oliver says in her *A Poetry Handbook*, “a life-cherishing force...”

“Poems are not words, after all, but fires for the cold, ropes let down to the lost, something as necessary as bread in the pockets of the hungry.”

It all really started for me as an experiment in summer writing. Poetry, and my attempts to try on what it might be like to be a poet, unfolded during the summer of 2011. It turned out to be the next natural extension in a personal quest to explore all things natural (though this exploration was anything but systematic). My wife Anneke encouraged and enabled these flights of ecological fancy: there was the summer I wanted to be a mycologist, and another summer it was a fascination with bats, and yet another summer an obsession with dragonflies. At each point my wife humored me, purchasing a variety of books and guidebooks (delivered as birthday presents) to help along these amateur aspirations.

Poetry emerged for me similarly. My first task in becoming a poet, I thought (and Oliver recommends this in her *Handbook*), was to read as much poetry as I possibly could. I had a sense that with poetry just about anything goes, but I wanted to see and read firsthand all the poetic approaches and voices possible. Again, my birthday presents that year stoked that interest. In one popular anthology of poetry I encountered for the first time a Mary Oliver poem, and it has turned out to be my favorite, *The Black Walnut Tree* (presented to left).

I soon discovered what Oliver knew so well--that poems had real power, both in their writing and in their reading by others. For me writing a poem was

part puzzle, part zen meditation. It was a chance to work through the significance of something small that I had discovered (a Blue Jay feather), or heard or experienced (a storm, a snow event), or just thought about (death and aging), and to create a nugget of expression, a compact package of words that helped me to make sense of things. I have enjoyed, as well, organizing the spatial flow of words on a page; poems are a kind of sculptured word art. For me, the poems are reward enough without anyone else reading them (though I am hoping my kids may discover and relish them at some later point in time).

Oliver showed that poetry need not be inaccessible or obtuse; indeed it should not be. It does not take an English professor to finely interpret what her poems say or mean--that is not necessary. You know what they mean, and their impact is felt, almost like a warm breeze or a bird call or the textures of the bark of an oak tree. They are crisp and clear and understandable; powerful in their meaning and intent and purpose. Her poems are paeans to nature; they profess a sense of reverence for and curiosity about the outside world, and a sense of mystery as well, that lasted the entirety of her life. Her poems are deeply personal as she in a way introduces readers to a natural world that consists of many close friends and kin, whether red bird or cricket or lily.

Oliver approached the writing of poetry not so much as strokes of inspiration but as a craft to be worked. Poems had to be sufficiently labored over to be good. She talks of the typical “forty or fifty drafts” and the “almost endless task” of revision. Hard work is the norm but the potential positive results are infinite. “It is good to remember,” she says, “how many sweet and fine poems there are in the world--I mean, it is a help to remember that out of writing, and the rewriting, beauty is born.”

I have enjoyed writing some of my own poetry, but more enjoyable still has been sharing poetry with others. In my large introductory lecture class, I started to read a poem as a way of closing each class. It was not always easy to halt the outward rush of students anxious to move on to their next commitments, to hush them into listening. Probably at least half the time it was a Mary Oliver poem. In addition to reading poems in class, I made copies

of poems and gave them out as students handed in their midterm and final exams. It was a kind of gift, something I could give them of great value and I know they were mostly appreciated.

In another class, *Cities + Nature*, I asked students to keep an urban nature journal. Certain things must be in those journals, including at least one original poem. I have plans to collect and publish these poems because so many of them are so lovely. Writing a poem, Oliver taught me, is a way of communicating emotion and affection for wild places; something essential for urban planning students to learn in a world where the forces of destruction seem to have such a head start.

Once I had the idea that I was going to write an article about the power of poetry; about how poetry could save the world. I had to talk to Mary Oliver, I thought, and so I reached out to her publishing company. They referred me to her publicist who referred me to her agent (the precise sequence is today a bit fuzzy). The word eventually came back that Oliver did not do interviews. I was crestfallen but not surprised. I've wondered ever since what that conversation might have been like. I am sure she would have been modest about her own role. And I suspect she might have advised me to spend less time pontificating about the need for more poetry and more time reading and writing it. And I am sure she would have advised me to get off the phone and go outside.

Mary Oliver (1994). *A Poetry Handbook*. San Diego: Harcourt Brace & Co.



Mary Oliver
Photo Credit: Literary Arts

