Green City, Clean Waters Program: Green Schoolyards for Stormwater Management

Philadelphia, USA
Cities included in this series

Antwerp
Barcelona
London
Melbourne
Paris
Philadelphia
Portland
[...]
ACKNOWLEDGMENTS

Our work is to rapidly convert cities into places whose systems nurture human life. An important facet of this work is to share information and analyses of such experiments with a broad audience, from practitioners, advocates, and zealots, to newcomers who are curious or concerned about the future.

Each case study in this series is analyzed through the lens of how it benefits the health of young children and their caregivers, and details how it was carried out. These cases are one part of “Born Thriving,” a suite of publications created to mainstream infant, toddler, and caregiver-focused neighborhood planning in Tirana, Albania.

Born Thriving is carried out in collaboration with the Municipality of Tirana, with the support of Bernard van Leer Foundation’s Urban95 program. This research benefited from the work of TUT-POL (Transforming Urban Transport Political Strategies and Tactics) at the Harvard Graduate School of Design, led by professors Diane E. Davis and Lily Song.

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Finally, we extend our gratitude to the many people we interviewed for these cases, and their generosity to candidly discuss the challenges in their work from which we can all gain so much.
Transforming Philadelphia’s Schoolyards: Addressing Play Deserts and Sustainable Water Management

Philadelphia, USA
Weighted population density: 5,238/km²
People near services: 38%
Avg block size: 59 blocks/km²

Tirana, Albania
Population: 906,166 (2019)
Weighted population density: 10,786/km²
People near services: 63%
Avg block size: 39 blocks/km²

Key Actors: Philadelphia Water Department, Community Design Collaborative, West Philly Coalition for Neighborhood Schools

Keywords: scalability, schoolyards as public parks, stormwater infrastructure/management, community-driven change

This is the story of a schoolyard greening initiative established within severe funding limitations and a lack of neighborhood play space, and the challenge posed by maintenance logistics in the long term. Facing declining revenue and aging water infrastructure, the City of Philadelphia instituted the Green City, Clean Waters initiative as an affordable way to manage stormwater runoff. One of the many projects within the initiative sought to transform asphalt schoolyards into green public spaces. The initiative allowed for both stormwater management and improved access to quality play space for children. The project was initiated and has been sustained by grassroots organizations, school communities, a patchwork of local government funding, philanthropy, and NGOs. But inconsistent financial support from the Philadelphia School District has forced schools to rely heavily on volunteer support to maintain the school parks, resulting in inconsistencies in quality, premature design failures, as well as the emergence of new alliances and solutions.
Widespread inequality, limited public school funding, and a lack of access to play space affects a huge number of children in Philadelphia neighborhoods. Some of the earliest efforts to improve this situation by making physical improvements to schoolyards took place in the early 2000s, with parents, teachers, and community members organizing greening efforts. Many of these groups partnered with the design organization Community Design Collaborative (CDC), which provides pro-bono design services for nonprofits. According to Heidi Segall Levy, director of design services for CDC, the idea for greening asphalt schoolyards and opening them up to the community came from a former Philadelphia School District superintendent, who initiated Chicago’s Campus Parks program before coming to Philadelphia. But subsequent administrations were not as enthusiastic about the idea, and did not allocate funding to support the program. This lack of support meant that parents, teachers, and community members had to seek external help and fundraise for their initiatives.

In 2011, the Philadelphia Water Department (PWD) launched its Green City, Clean Waters program as part of its sustainability and climate change adaptation strategy, which sought to address flood protection, stormwater treatment, and the purity of rivers and streams in the city. The PWD invested in green stormwater infrastructure in schoolyards, implementing tools such as rain gardens, rain barrels, and porous paving. This provided an opportunity for the city to fund schoolyard greening initiatives in the absence of financial support from the school district. In addition to stormwater management, new schoolyards included infrastructure to support active play, outdoor learning opportunities for students, and green landscapes such as shrubs, trees, and vegetable or fruit gardens.

The CDC provided design concepts to some of the first participating schools, such as Greenfield Elementary in Center City and Henry C. Lea Elementary School in West Philadelphia, which allowed the school communities to apply for grants from the PWD and philanthropic sources. Fundraising, which was often the responsibility of schools and individual volunteers, was imperative in order to cover implementation and maintenance costs. The national organization Trust for Public Land (TPL) began supporting Philadelphia schools in 2012 for the design and construction processes through their Parks for People project, but the participatory nature of these processes still required each neighborhood to maintain the schoolyards in the long term. Thus, despite the disproportionate need for these community spaces in lower-income neighborhoods, the complex dynamics of engaging these

What makes this project supportive of infants, toddlers, and their caregivers?

→ Outdoor time: Making play and green space accessible to the wider community outside of school hours means that infants, toddlers, and their caregivers have more options for places to play, ride their bikes, and socialize close to home.

→ Environmental health: Improving the quality of schoolyard shade, rest spots, and entryways allows for a more welcoming and accessible public space.

→ Sustainability: Gardens and street trees planted as part of the city’s stormwater management contribute to a more resilient and sustainable city.
The transformation of Henry C. Lea Elementary School in West Philadelphia illustrates how an engaged network of community members can implement a schoolyard project with limited resources. The West Philly Coalition for Neighborhood Schools (WPCNS) is an organization of parents and residents who have been the main drivers of schoolyard greening efforts at Henry C. Lea. The organization was founded in 2010 by parents whose children attended a nearby school to address some of the funding inequities between the public schools in the neighborhood. The WPCNS seeks to promote resources for local schools and connect neighbors and parents, while maintaining the mainly Black and working-class fabric of their neighborhood. In November 2012, the WPCNS piloted their first greening project; they also received support from the Philadelphia School District and the Local Initiative Support Corporation. They replaced a barren planting bed in the schoolyard with 1,400 square feet of new trees and shrubs. This was implemented by sixty community volunteers over three days. The large number of volunteers and significant community engagement created the conditions for the WPCNS to gain community support and fundraise for a bigger schoolyard design plan.

The WPCNS was then able to partner with the Lea Home and School Association, and received a design grant from the CDC in order to plan the new schoolyard. This design grant included volunteer-led community design engagement, with design plans provided by architectural firms. However, in order for the CDC to provide a design grant, the grant recipient had to be a tax-exempt charitable organization. As Segall Levy explained, this meant they could not award the design grant directly to the school, but rather to a nonprofit neighborhood organization like WPCNS, or to a separate “Friends of School” nonprofit which often were set up primarily for these schoolyard projects.

To engage with the neighborhood and school community, CDC worked with the school to create a community task force consisting of parents, students, teachers, neighborhood residents, school administrators, and funders. The volunteer design professionals then worked with the task force to create preliminary designs. This led to the creation of a masterplan presented to the larger community in January 2013.

The plan drew heavily on the earlier renovation of the Greenfield Elementary schoolyard, while also considering the unique spatial challenges of Lea, such as the lack of
shade, dark and isolated sections of the play lot, and the proximity of the basketball court to the street. The plan proposed new playground equipment for different ages, an outdoor classroom space, murals, increased green planters and gardens, and a drainage system to incorporate stormwater management, the latter to be funded by PWD.\(^8\) Once community discussions about the design were complete, the WPCNS used this conceptual design plan to apply for (and subsequently win) the Stormwater Management Incentives Grant from PWD. They also received the Green Region grant from PECO Energy Company. With this funding, WPCNS and Greening Lea project partners were able to hire architects to further develop the design for the project, conduct further public meetings, and reengage parents and students on their desires for the new schoolyard. According to a Greening Lea volunteer and local architect, Julie Scott, this was accomplished by holding meetings at different times of the day, speaking with teachers, and surveying parents when they attended parent-teacher conferences. The final design plan integrated feedback from students, teachers, and parents, including requests to retain a certain amount of hard surfaces for children who practiced bike riding in the schoolyard during off-hours, and to use trees to delineate the basketball area from the rest of the schoolyard.\(^9\)

The role of volunteers, community members, and parents as technical experts and intermediaries was central to many of the early schoolyard projects in Philadelphia. Greenfield Elementary served as a model for many other Philadelphia schools, and the unique process the school went through highlights the tensions between the community capacity and its geography and socioeconomic makeup. As Segall Levy describes: “With Greenfield, several parents who were leading the effort were actually design professionals, so they had the knowledge and experience to take this through. They ended up owning the schoolyard project through a memorandum of understanding with the school district. They were able to hire design consultants and contractors on their own, and they then ‘gifted’ it back to the school district after it was done.”\(^10\) Located in the core of Philadelphia, Greenfield had many affluent community members involved in the process that together they had the skills, time, and resources to take on the design project and manage implementation on their own.

Similar to Greenfield, volunteers at Lea were design professionals who were able to fundraise, hire contractors, and facilitate the construction project, then gift it back to the school. Although both schools have diverse student bodies, Henry C. Lea has a large concentration of students from low-income...
families, and the impetus behind starting WPCNS was to address the lack of resources Lea had access to, compared to a nearby school associated with and supported by the University of Pennsylvania. Many of the volunteers involved in the process, including Scott, were part of the neighborhood but not actually parents of students at Lea. Although the school district eventually hired a landscape architect and took on some of the construction of schoolyard projects at other schools in Philadelphia, there has been a lack of consistent school district support.

The case of Henry C. Lea highlights the importance of a group of dedicated, equity-focused individuals willing to lend their time and expertise to the process. While the support of the Trust for Public Land has reduced the obstacles faced by schools in economically disadvantaged areas, those involved with these processes in Philadelphia have emphasized the need for a more consistent supporting role from the school district and school administrations themselves, in order to make this a cohesive project across city schools.

The process of implementing schoolyard greening initiatives varies according to the resources and partners involved. As part of the new playground design, Henry C. Lea received play equipment donated by the school district that were made available due to restructuring and closures of other Philadelphia public schools. The closure of a nearby elementary school, whose students were relocating to Lea, meant that its play equipment could be moved by the school district. The Greening Lea team decided to draw on the PWD and PECO grants to purchase a new play structure as well and install it on a new water-porous rubber play surface. The PWD funds contributed to the purchase of the new surface and allowed the team more flexibility with stormwater management elements during the second phase of construction. The second phase utilized the remaining grant and community-raised funds for de-paving, new plant beds, two dozen new trees, three rain gardens, seats, and a new entryway. The construction was completed and the new schoolyard opened to the public in May 2016.

Although the PWD’s investment in greening schoolyards has helped school communities across the city to build better public space for their neighborhoods, reaching the neighborhoods most in need has been a challenge. The CDC’s experience partnering with PWD on designing green schoolyards for underserved communities highlights this: “populations in the school and the community really wanted [the schoolyard project], but they didn’t necessarily have the capacity to raise the funds to implement it, or to even
maintain it after it was done. In a lot of families in these neighborhoods, parents are working multiple jobs and they don’t have time to come out and volunteer, or to come to a meeting. Unfortunately, in the beginning wealthier neighborhoods and those with more capacity were the ones that were getting these funds.”

The paradox is targeting lower-income areas, which often face a lack of green or accessible play space for children, then realizing that most of the parents and neighbors were simply unable to give the time required to have the project be community-led, much less community-maintained. A core group of engaged volunteers was essential, because the School District of Philadelphia was not able to take ownership of the upkeep of the schoolyards. As Segall Levy describes, “The only thing that is really clear across Philadelphia schoolyards is that the school district does not have the resources to maintain the enhanced spaces.”

Despite varying levels of school district involvement in implementing the project, it becomes primarily the responsibility of schools, teachers, and volunteer community members to maintain the schoolyards. In the case of Henry C. Lea, parents, community members affiliated with WPCNS, and volunteers from Philadelphia Orchard Project gather twice a year for schoolyard workdays to help maintain the yard, its gardens, and the various green features. These events continue to be coordinated by volunteers, like Scott, who also facilitate monthly maintenance in the summer. The school administration has relied on hundreds of volunteer hours since the project was implemented in 2015.

According to Segall Levy, PWD would train volunteers on maintaining specific stormwater management elements after implementation, with the expectation that the community could then take over. However, depending on the complexity of the features, many schools have found it difficult to rely on volunteers to maintain that infrastructure, forcing them to fundraise in order to contract help. In some cases, PWD did the maintenance work for the first years.

**IMPLICATIONS FOR TIRANA**

The green schoolyards project in Philadelphia demonstrates how municipal-led sustainability initiatives and community-led school improvements can converge to advance accessibility to play in neighborhoods. Particularly relevant to cities with limited budgets, this case provides important lessons for Tirana on how to contribute to water, play, and park infrastructure under a single municipal program. Tirana’s public schools are well distributed in the city, and their transformation into parks would give most residents convenient access to green space that is currently scarce. Green schoolyards double as stormwater management and collection facilities that mitigate the impacts of Tirana’s significant annual rainfall.

PWD’s efforts were framed around climate resiliency and city-greening efforts, though the grants they awarded to schools ensured that these new schoolyards would serve as revitalized parks for the community. The community-engaged design process also created large-scale support and involvement of residents. Scott observed that utilizing technology and online survey tools encouraged parents to give feedback on designs. Segall Levy noted that there was sometimes initial resistance from school administrators who
were concerned that their neighborhoods were not safe enough to accommodate open schoolyards. However, once open to the public, these schools actually found less instances of vandalism, because the community had taken greater ownership of the space.

The engagement of residents in Philadelphia was essential to the process. The terms of that engagement brought up many questions of equity and capacity, which echo some experiences of the play streets movement in the United Kingdom, in efforts to reach communities most deprived of equitable access to public space for children. Although both cases have political support and some resources allocated by local authorities, they mainly rely on the volunteerism of parents and community members to sustain them. The bottom-up approaches of parent-led play streets in Bristol and the first major schoolyard effort in Philadelphia are important examples of how parents and residents can push sustained changes to the urban fabric.

However, these cases illustrate that exporting resident-led models from upper-middle-class neighborhoods to other areas in an effort to address systemic inequalities will differ. And that volunteer-dependent maintenance will tend to succeed in areas where residents have higher socioeconomic levels and thus free-labor time to donate to local causes.
NOTES

1 Heidi Segall Levy, interview by Helen Ketema, May 12, 2020


6 Segall Levy, interview by Ketema.


8 West Philly Coalition for Neighborhood School, “Greening Lea.”


10 Segall Levy, interview by Ketema.

11 Scott, interview by Ketema.

12 West Philly Coalition for Neighborhood School, “Greening Lea.”

13 Segall Levy, interview by Ketema.

14 Segall Levy.

15 Scott, interview by Ketema.

16 See the case study in this series, Play Streets: Residents Promote Public Play Space (Tirana: Qendra Marrëdhënies, 2020).
CASE STUDIES IN NEIGHBORHOOD PLANNING FOR YOUNG CHILDREN AND THEIR CAREGIVERS

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These case studies are part of “Born Thriving,” a multi-year program to mainstream neighborhood planning principles focused on the needs of young children and their caregivers in Tirana, Albania.

Born Thriving’s written guidance consists of three volumes: neighborhood design guidelines (vol. 1); the neighborhood indicator baseline (vol. 2), and neighborhood planning case studies (vol. 3).

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