



POLICY BRIEF

Enhancing Health and Well-Being via the Built Environment: Investing in Green Schoolyards

In large cities, like Chicago, children from low-income families and communities of color are likely to attend schools with limited access to physical activity and health services, inadequate access to safe green space, and exposure to environmental toxins in air and water.

The low-income communities in which these schools are situated are less likely to have parks, playgrounds or green space for outdoor play or connecting with nature, and many students come to school suffering the impact of food insecurity and childhood trauma. The lack of a healthy and supportive school climate can also exacerbate chronic absenteeism—defined as missing 10 percent or more of school days for any reason, excused or unexcused—a proven early warning sign of academic risk and school dropout.

A growing body of research shows that green schoolyards can have a positive impact on children, teachers and the entire school community.

The Children & Nature Network—a leader in the movement to bring green schoolyards to communities across the country—defines green schoolyards as multi-functional school grounds, designed by and for the entire school community, that include places for students, teachers, caregivers and community members to play, learn, explore and grow. A shared space in nature where people can sit, relax, play, exercise or gather with friends and family is a significant community asset.

Green schoolyards can include a combination of features such as outdoor classrooms, traditional play equipment, nature play areas, edible gardens, trails, and trees and shrubs. In addition, many green schoolyards include features designed to build climate resilience and other environmental benefits, such as native and pollinator gardens and green stormwater infrastructure.

This brief describes the multiple co-benefits of green schoolyards for communities; provides a case study of the Space to Grow model; and offers practical suggestions to policymakers and advocates interested in beginning, expanding and making the case for a green schoolyard initiative.

The Impact of Green Schoolyards

Many children, families, and communities do not have access to green space, safe parks or even a school playground where they can go to play, explore and be together outside. For 80 percent of the people living in the U.S., there is only one park for every 3,000 people (Trust for Public Land, 2015).

Schoolyards provide a key opportunity for addressing the lack of green space in urban areas. School districts are some of our nation's largest landowners, with more than 130,000 schools in this country (U.S. Department of Education, 2015). Cities have the highest concentration of schools – New York City alone is home to 1,800 public schools – so most urban neighborhoods are connected to a schoolyard. Unfortunately, many urban schoolyards are filled with concrete or asphalt and are closed to the community. Some are even closed to the children who attend the school.

The benefits of green schoolyards – especially for outdoor learning and play – to children of color living in low-income urban communities are remarkable. Increasing exposure to nature through green schoolyards has been shown to benefit individual health through increased physical activity, especially on grassy and playground areas (Andersen et al., 2015), as well as positive social-emotional outcomes, including decreased stress, improved mood and prosocial behavior (Chawla et al., 2012; Bates, Bohnert, & Gerstein, 2018). Educationally, green schoolyards offer opportunities for daily attention restoration and opportunities for hands-on learning, and are associated with higher student test scores (Williams & Dixon, 2013), higher teacher morale and motivation (Green & Turrell, 2005), and better overall teacher retention than schools without green spaces (Buckley, Schneider, & Shang, 2004).

For communities, green schoolyards serve as gathering spaces that promote community cohesion and positively impact perceptions of neighborhood safety and cleanliness.

Cities also face difficult challenges related to climate and water management that can be positively impacted by green schoolyards. For example, Chicago has a profound flooding problem that results from hundreds of acres of impermeable surfaces and a combined sewer system that frequently overwhelms the region's water treatment facilities. While the city's water agencies have invested billions of dollars in deep tunnel, reservoir and sewer reconstruction projects, none is capable of fully meeting the area's stormwater management needs. Further, climate change is predicted to significantly increase the area's annual rainfall and the frequency of major storm events, and this impact will disproportionately fall on low-income communities. Urban flooding can directly cause health issues, with chronically wet houses linked to higher rates of respiratory problems, including asthma. It is also an indirect determinant of health, with the stress and economic insecurity created by flood damage leading to physical and emotional health problems.

Green schoolyards can be designed to mitigate the effects of climate change and positively influence the neighborhood infrastructure. Green space makes cities more energy efficient and more resilient to the effects of climate change. As cities around the country develop resilience plans and adopt sustainable initiatives, green schoolyards can be an effective strategy to address a broad set of issues in a comprehensive way – such as helping address challenges that arise from urban flooding, drought or heat island effects – by increasing natural land cover and mimicking natural processes to manage stormwater.

From a public strategy standpoint, these benefits on the environmental, individual, school and community levels, make green schoolyards a wise investment, particularly in low-income urban areas.



The Space to Grow Model

Space to Grow, Chicago's green schoolyards program, is a multi-sector, public-private partnership that transforms schools in low-income communities across Chicago. Space to Grow, which is managed by two non-governmental organizations, Healthy Schools Campaign and Openlands, has three key features: a unique partnership model, an inclusive community design process and ongoing support that ensures that the schoolyards are highly utilized by students, families, teachers and the community.

The Space to Grow model brings together capital funds, expertise and leadership from Chicago Public Schools, the Chicago Department of Water Management, the Chicago Mayor's Office and the Metropolitan Water Reclamation District of Greater Chicago. Space to Grow maximizes financial investment from the two water agencies by designing schoolyards with green infrastructure features that absorb large amounts of water, keeping it out of the sewer system during the heaviest of storms.

Space to Grow gives students, staff, families and community members in low-income Chicago neighborhoods a real voice in shaping a key neighborhood resource. Green schoolyard planning and design includes input from students, caregivers, school staff, nearby residents and community groups. These stakeholders provide input on the most desired features of the schoolyard, such as play equipment, fields and paths, as well as practical concerns, such as the importance of visibility for parents or staff to watch children throughout the schoolyard, or the importance of shaded areas. Incorporating the unique needs of the community promotes ownership, adoption and maintenance in years following a schoolyard transformation, allowing communities to continually capitalize on the benefits of green schoolyards.

After the schoolyards are constructed, the Space to Grow partners organize parent and community engagement events to ensure continued touch points and help break down any barriers to community use of the new space. This engagement is critical to the long-term success

of the schoolyards, ensuring that the schoolyards are viewed as an important school and community resource, and that stakeholders are engaged in caring for and promoting the use of the schoolyards.

The Space to Grow partners provide a professional development program that equips teachers with the knowledge necessary to utilize the schoolyards for lesson plans related to environmental sciences, nutrition education, physical activity and other disciplines. Space to Grow partners also engage parent and community leaders and provide technical assistance and support throughout the year to school wellness teams and garden teams at Space to Grow schools to build a culture of wellness in the school and to ensure that the edible and native plant gardens can be utilized effectively and sustainably.





The Impact of Space to Grow

Space to Grow’s impact on students, schools and communities has been rigorously assessed through formal research using a multi-method strategy (see Bates et al., 2018). An evaluation of the planning and design process demonstrated that stakeholders who attended design planning meetings — including caregivers, teachers and community members — felt their ideas were represented in the schoolyard redesign. Further, stakeholders in the community reported being happy with the planning, design, implementation and overall results of the transformation. In addition, principals highlighted long-term opportunities for classroom use, after-school activities and school and community events. Space to Grow’s community engagement process ignites opportunities for long term community-wide benefits.

Using observational, survey and community aggregate data, changes in key outcomes were also evaluated. Findings revealed that the schoolyards were better utilized by students and adults following the transformation. The green schoolyards were safe spaces for children to play, engage in positive social interactions and partake in physical activity, with these effects maintained long term (Bates et al., 2018). The school environment was also positively impacted by the transformation, as caregivers, teachers and community members collectively reported that schoolyards were safer and more inviting, and there were fewer injuries and less gang activity when comparing pre- to post-transformation data, with these improvements retained over time.

Teachers reported using the schoolyard as an extension of the classroom and going about their work with enthusiasm significantly more following the schoolyard transformation. Further, caregivers and community members reported improved relations and greater trust in the school following the transformation. The schoolyard transformation also positively impacted perceptions of the neighborhood. Caregivers reported being more attracted to living in the neighborhood and feeling a greater desire to remain a resident. Overall, the results of this formal evaluation suggest that Space to Grow’s transformation of green schoolyards promotes positive student development, improved school environments and improved perceptions of neighborhoods among individuals living in these urban, low-income communities.

Space to Grow is also a proven response to the impact of climate change and disinvestment on low-income Chicago neighborhoods, schools and students, especially in terms of urban flooding. The program leverages public investment of capital resources and expertise from Chicago’s water management agencies as part of an integrated and comprehensive solution to managing the city’s stormwater and flooding issues. The 20 current Space to Grow schoolyards have been designed to hold over 3.5 million gallons of water at any given time. The partners have committed to building at least 34 schoolyards together, which are anticipated to capture a total of over 5 million gallons of stormwater, keeping that water out of the sewers during the heaviest of storms.



Recommendations for Policymakers and Advocates

Investing in green schoolyards provides multiple returns in the form of community benefits and can help communities address health disparities, serve a diverse set of constituents and make communities more resilient. Green schoolyards can be supported by policy and collaboration that encourages public investment in important community assets. Given the disparities that exist in this country around health, education and access to open space, policy can also play an important role in addressing equity and ensuring that green schoolyards are available to all students, families and communities.

Funding + Developing Green Schoolyards

The [2016 State of Our Schools](#) report issued by the 21st Century School Fund, the National Council of School Facilities and the Center for Green Schools, documents the tremendous gap in school infrastructure spending — about 46 billion a year — between what is spent and what is needed to provide healthy, safe and modern school facilities. Currently, school funding is largely the province of state government and local school districts, and the average school construction project receives less than one percent of its funding from the federal government (Filardo, M., et. al., 2010).

Federal, state and local governments should prioritize funding so that all children can attend a school that is healthy, safe and modern — including providing students with a green schoolyard. The following policies would ensure funding for green schoolyards is allocated and prioritized:

- States and school districts should adopt the Children & Nature Network’s definition of green schoolyards, and prioritize capital projects that provide students and the community with a green schoolyard.
- State and local sources that fund educational facilities should include funding of green schoolyards in any and all assessments of capital funding plans and capital funding needs.
- Federal and/or state governments should provide school districts with best practices and technical resources for the design, development and maintenance of green schoolyards.
- The U.S. Government Accountability Office (GAO) should include in its periodic assessments of school facilities the outdoor space and presence (or lack thereof) of green schoolyards.
- The U.S. Department of Education Office for

Civil Rights (OCR) should include in its bi-annual data collection the prevalence of green schoolyards or conditions of outdoor spaces at schools, to ensure equitable distribution of green schoolyards.

- Water management agencies should explicitly allow and encourage the funding of green schoolyards as part of stormwater management and green infrastructure plans.

Supporting Cross-Sector Partnerships

Coordinated funding and cross-sector partnerships can help make green schoolyards a reality across the country. Green schoolyards have many benefits, making their development and maintenance an ideal opportunity for cross-sector partnerships between education, public health, environment, water management and municipal agencies, among others. The most successful green schoolyard initiatives around the country have included partnerships among multiple sectors. For additional information and innovative case studies, see the national report, [Green Schoolyards: A Growing Movement Supporting Health, Education and Connection with Nature](#).

In addition to capital/construction costs, financial support is needed for creating and maintaining these partnerships; for supporting the engagement of the school and community in the design and use of the schoolyards; and for maintaining the green schoolyards. Policy priorities should include:

- Policy makers should include green schoolyards in grant programs to fund partnership, collaboration, support services, community organizing and engagement and ongoing maintenance for green schoolyards.
- Policy makers should encourage cross-agency green schoolyard collaborations and allow for the blending and braiding of funding to support holistic green schoolyard programs that provide multiple co-benefits and explicitly address equity.
- Policy makers, federal agencies and regulatory bodies should explicitly name green schoolyards in examples of how entities, including banks and hospitals, can meet their community investment and community benefit requirements through the Community Reinvestment Act and the Affordable Care Act.

Ensuring Accessibility of Green Schoolyards

Green schoolyards should be open to the entire community outside of school hours and accessible to people of all abilities and ages. Shared use agreements allow public and private property owners to broaden access to facilities for community use. Change Lab Solutions offers a number of resources for more information about [shared use policies](#). The following policies support the accessibility of green schoolyards:

- School district and city policies should allow and encourage schoolyards to be open to the community outside of school hours, on weekends and during the summer months.
- Municipalities and school districts should allow and encourage multi-agency shared use agreements that allow agencies to combine resources, share facilities and offer programs to the community.
- State and local agencies should include green schoolyards in recreational use agreements and policies.
- School districts should align green schoolyard design and specifications with traditional park district guidelines to ensure accessibility and ADA compliance.

Advancing the Green Schoolyards Movement

A number of initiatives and programs from various sectors can support the development, maintenance and programming for green schoolyards. A range of public policies can support the implementation of green schoolyards around the country:

- The federal government should support research that documents the programmatic benefits of green schoolyards from a multidisciplinary perspective (e.g., education, health, environment, equity, resilience), as well as their economic benefit and return on investment.
- School districts should integrate outdoor learning requirements into state and local Environmental Literacy Plans.
- States and school districts should require recess and physical education based on recommendations from the Centers for Disease Control and Prevention, and encourage the use of outdoor space in implementation of those programs.

- The Centers for Disease Control and Prevention should integrate green schoolyards as a best practice in its School Health Index.
- States should include green schoolyards as a criterion for nominating schools for the U.S. Department of Education Green Ribbon program.
- States and municipalities should explicitly include green schoolyards when developing plans and strategies addressing equity, community revitalization, public health, climate resilience and/or sustainability, stormwater management and green infrastructure, park and green space expansion, and land use and habitat plans.

Investing in green schoolyards is an effective and scalable way to promote health and well-being, access to nature, equity and community resilience. Space to Grow presents a dynamic model for transforming schoolyards into vibrant green spaces and a number of public policies can support the

widespread development of green schoolyards in communities across the country. Creating school and community access to nature and play space in schoolyards in every community will have a lasting impact on children’s health and well-being, particularly for our most vulnerable children.



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HEALTHY SCHOOLS CAMPAIGN

Healthy Schools Campaign (HSC) is a nonprofit organization dedicated to making schools healthier places for all students. HSC believes that health and wellness should be incorporated into every aspect of the school experience. Founded in 2002, HSC advocates for children to have better access to nutritious school food, physical activity, school health resources and clean air to shape their lifelong learning and health. HSC facilitates collaboration between students, parents, teachers, administrators and policymakers to help prepare this diverse group of stakeholders to lead change for healthier schools at the school, district, state and national levels. For more information, visit healthyschoolscampaign.org.



Founded in 1963, Openlands protects the natural and open spaces of northeastern Illinois and the surrounding region to ensure cleaner air and water, protect natural habitats and wildlife and help balance and enrich our lives. Openlands' vision for the region is a landscape that includes a vast network of land and water trails, tree-lined streets and intimate public gardens within easy reach of every city dweller. It also includes parks and preserves big enough to provide natural habitat and to give visitors a sense of the vast prairies, woodlands and wetlands that were here before the cities. In sum, Openlands believes that protected open space is critical for the quality of life of our region. For more information, visit openlands.org.