



Ten steps to greening school grounds & nature-based education

A global framework for municipalities and organisations working across systems

B. Kessler



Ten steps to greening school grounds & nature-based education

A global framework for municipalities and organisations working across systems

B. Kessler



CC BY-NC 4.0 Attribution 4.0 International. This work is licensed under [https://](https://creativecommons.org/licenses/by-nc/4.0/)

creativecommons.org/licenses/by-nc/4.0/. The user is allowed to distribute, remix, adapt, and build upon the material in any medium or format. The user must give appropriate credit to IUCN as the source of the material and indicate if changes were made to the original content. Only non-commercial uses of the work are permitted. Use of the name and logo of IUCN is not permitted in connection with adaptations, translations, or other derivative works.

Adaptations/translations/derivatives should not carry any official logo, unless they have been approved and validated by IUCN. Please contact IUCN (logo@iucn.org) to obtain permission.

When copyright of content published by IUCN, such as images, graphics or logos, is held by a third-party, the user of such content is solely responsible for clearing the rights with the right holder(s).

The user acknowledges and agrees that any transformation, adaptation, translation or alteration of the Original Content provided by IUCN “hereinafter referred to as “Original Content” is done at the user’s own risk. In no event shall IUCN be liable for any damages, losses or consequences arising from the use, modification or adaptation of the Original Content. The User agrees to comply with all applicable laws and regulations when transforming, adapting or redistributing the Original Content. Furthermore, IUCN does not guarantee the quality, accuracy, integrity or legal compliance of the Original Content after its transformation or adaptation. IUCN expressly disclaims all liability for any copyright, trademark, or other legal infringement that may result from the modification or unauthorized use of the Original Content.

The designation of geographical entities in this work, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of IUCN or other participating organisations concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this work do not necessarily reflect those of IUCN or other participating organisations.

IUCN is pleased to acknowledge the support of its Framework Partners who provide core funding: Ministry of Foreign Affairs, Denmark; Ministry for Foreign Affairs, Finland; Government of France and the French Development Agency (AFD); Ministry of Environment, Republic of Korea; Ministry of the Environment, Climate and Sustainable Development, Grand Duchy of Luxembourg; the Norwegian Agency for Development Cooperation (Norad); the Swedish International Development Cooperation Agency (Sida); the Swiss Agency for Development and Cooperation (SDC) and the United States Department of State.

Published by: IUCN, Gland, Switzerland

Produced by: The Children & Nature Network, Saint Paul, MN

Copyright: ©2025 IUCN, International Union for Conservation of Nature and Natural Resources

Recommended citation: Kessler, B. (2025). *Ten Steps to Greening School Grounds & Nature-Based Education*. IUCN.

ISBN: 978-2-8317-2363-1 (PDF), 978-2-8317-2364-8 (print)

DOI: <https://doi.org/10.2305/UTCK1946>

Cover photo: Frederik Beyens

Layout by: Children & Nature Network

Table of contents

Executive summary	iv
Acknowledgements	v
Benefits of green school grounds	1
Growing a global movement	2
How to use this guide	4
Definitions	5
Ten steps to greening school grounds	6
Setting the stage:	7
1. Organise & set a vision	11
2. Advocate	16
3. Build partnerships	20
4. Develop policies	22
5. Select sites & secure funding	27
6. Co-design, construct and celebrate!	33
7. Activate for learning and play	39
8. Maintain school grounds	42
9. Monitor and evaluate	46
10. Transfer the skills and knowledge	48
Greening school grounds resources	50
References	53

Executive summary

Today children are spending less time outdoors, disconnected from the natural world—a trend with far-reaching consequences for both human well-being and the planet's health. Strengthening the bond between children and nature is more urgent than ever. Recognizing this, the IUCN Commission on Education and Communication has championed Nature-Based Education as a key solution to the intertwined climate and biodiversity crises. In 2012, the resolution *A Child's Right to Connect with Nature and to a Healthy Environment* was introduced at the World Conservation Congress, underscoring how everyday experiences in nature can inspire lifelong stewardship. Since then, much progress has been made around the world to bring this vision to life—but there is still much more to do.

In 2018 the Children & Nature Network identified key recommendations to inspire policies and practices that drive investment in programming, infrastructure and solutions to connect people with nature. Schools present an unparalleled opportunity to make this connection. As places where children spend a significant portion of their day, schools can foster relationships with nature through green schoolyards. These inviting, dynamic

environments nurture curiosity, imagination and a love for the natural world. Seeing the positive effect of these spaces, leaders worldwide are championing green schoolyards as a strategy to support children's needs, revitalise neighbourhoods, increase climate resilience and drive systemic change.

This document is the result of a collaborative effort grounded in the experiences and insights of practitioners who have led real-world green schoolyard initiatives. Drawing from these lessons learned, we've developed a practical, adaptable roadmap designed to help new cities launch and sustain green schoolyard programmes. This guide outlines ten practical steps—organised into three phases: *Setting the Stage*, *Moving Forward* and *Keeping It Going*—to provide cities with a structured yet flexible approach to transforming schoolyards into vibrant, nature-filled spaces for learning, play and community connection.

We hope it serves as both a source of practical support and motivation for municipal leaders to take bold action in transforming schoolyards into vibrant, nature-filled spaces that benefit children, communities and the environment.

“In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught.”

(Baba Dioum, 1968)

Acknowledgements

The author appreciates the time and input from all members of the International School Grounds Alliance and the IUCN Nature-Based Education Taskforce.

Special thanks to the contributions of Angela Ibañez of Patio Vivo; Cheryl Charles of IUCN-CEC; Jaime Ehrenberg and Priya Cook of the Children & Nature Network; Joaquin Leguia of Association for Children and the Environment (ANIA); Johan Lambrix, of Provinciaal Natuurcentrum Limburg; Josephine Bussiere of the City of Paris; Matt Robinson of Learning Through Landscapes; Shruthi Kottillil of the Youth Biodiversity Network; and Tommy Garnett of Environmental Foundation for Africa.

The author appreciates and acknowledges IUCN peer reviewers Ian Mostert and Lais Fleury.

Benefits of green school grounds

A growing body of evidence shows that time spent learning and playing in nature can help children reach their full academic and social-emotional potential. Regular access to high-quality greenspace improves mental and physical health and inspires strong connections to the natural world.

Academic: Nature improves academic performance by enhancing the cognitive function, physical and mental health, and social-emotional development that supports learning. In some contexts, kids who learn and play in natural environments have better performance in reading, math, science and social studies.

Health and well-being: Engagement with nature is linked to reduced stress and anxiety in children and youth, and may contribute to childhood and later-life mental health. Some studies show that as little as 10 to 20 minutes in nature daily can serve as a preventative measure for stress and mental health strain.

Physical activity: The presence of natural features like trees, plants and shrubs creates a more inviting and stimulating environment, encouraging children to spend more time outdoors. This leads to increased overall physical activity as children are more likely to engage in active play.

Beneficial play: Green school grounds often include a variety of natural play elements such as trees, rocks, hills and open grassy areas. These features provide diverse opportunities for children to engage in different types of play, from running and climbing to imaginative play and exploration. In this setting, play is more varied and lasts longer.

Climate resilience: Greening schoolyards helps communities become more resilient to climate-related shocks and stresses by managing stormwater, lowering temperatures, providing wildlife habitats,

sequestering carbon and removing air pollution (ISGA, 2025).

Environmental stewardship: Time spent in nature as a child, particularly in activities or places that evoke an emotional connection, can foster care and concern for the natural world. Both free play in nature and experiencing nature with a caring adult facilitate such a connection. These experiences can enhance positive attitudes toward the environment, encourage children to learn about environmental problems and solutions, and to take actions that demonstrate care for the Earth.

The elements above are a brief selection from the many benefits listed with references and abstracts by the Children & Nature Network (C&NN). The [C&NN Research & Resources Library](#) houses more than 1,500 articles on the benefits of children spending time in nature.

Growing a global movement

Efforts around greening school grounds can be traced back more than 150 years, with a focus on creating more natural and engaging spaces for children. However, a new movement emerged in the 20th century as educators, environmentalists and community leaders began recognising the profound benefits of outdoor learning and nature play for children's development and their health. In the 1990s, efforts to transform schoolyards into nature-rich spaces gained momentum, with organisations like Learning through Landscapes in the UK pioneering this work. These organisations helped champion the idea that schoolyards could be more than just play areas—they could serve as dynamic, educational environments that foster a deeper connection to nature.

By the early 2000s, the concept spread globally, with governments, schools and community groups around the world embracing the idea of greening school grounds to support children's well-being,

environmental stewardship and community resilience. Greening school grounds is also an intervention that aligns with many global focus areas—the [United Nations Sustainable Development Goals](#), the Kunming-Montreal [Global Biodiversity Framework](#), the [United Nations Decade on Ecosystem Restoration](#), and most recently, [UNESCO's Greening Education](#) partnership.

Promising models for scaling greening school grounds are emerging from all corners of the world. In the USA, The Children & Nature Network supports communities by providing resources, advocacy and technical assistance to help scale green schoolyard programmes across the country. Green Schoolyards America works with school districts across California and other states to create schoolyard forests that serve as dynamic nature-based learning environments. In Europe, the Cool School Project is led by teams in Brussels, Paris, Rotterdam and Barcelona. The Unwalled Schools initiative in Brazil and Children's



Figure 1. Global map referencing 2021 survey responses inquiring about school greening programmes across geographies. Image credit: Google Maps

Lands in Peru offer inspiring models for nature-based learning in Latin America. Our conversations with leaders of these programmes reveal that growing green school grounds on the necessary scale to serve children all over the world requires greater coordination, collaboration, ingenuity and sharing of knowledge.

Based on a global landscape scan of greening of school grounds and outdoor learning practices led by the Children & Nature Network in partnership with Salzburg Global Seminar, the International School Grounds Alliance, International Union for Conservation of Nature, #NatureForAll, and the National League of Cities, we know these practices are not happening equitably worldwide. We need help expanding to areas most in need. This ten-step guide was created to help foundations, NGOs and government agencies develop new green school grounds and outdoor learning programmes, and to serve as the basis for an online toolkit and capacity development programme.

How to use this guide

The aim of this guide is to inform the process for programme building, implementation and management of transformative green school grounds throughout a municipality. The intended users for this guide are multidisciplinary teams that may include:

- Policymakers
- School administrators
- Urban planners
- Landscape designers
- Civil servants
- Entrepreneurs
- Community leaders
- Environmental leaders

While readers are encouraged to review the guide in its entirety, each section can be pulled separately depending on where your efforts stand. We welcome you to use this as a pathway to aid your efforts to infuse nature into the daily lives of children. Throughout each step you will find case studies from programmes across the world. These successful greening projects shed some insights into the many benefits of nearby nature for students, educators and neighbours. The organisations featured in this guide have generously agreed to share their experiences to support the movement, as they continue to evolve and learn through their own journey.



Figure 2. Green-blue schoolyard transformation in Rotterdam, Netherlands. Image credit: Jaime Ehrenberg (2023)

Definitions

The following definitions provide consistent language and understanding around green school grounds. While we understand there are many variations on how people define these spaces, we hope that by having a common language, we can expand green school grounds to all corners of the world for the benefit of children and community members.

Community hub: In the context of green schoolyards, a community hub is a shared space for both students and the broader community. During the school day, it supports children's play and learning in nature. After school hours, it serves as a gathering place where families connect, elders relax and children play—strengthening the social fabric and fostering a sense of belonging.

Green school grounds: Nature-filled school grounds that support improving children's well-being, learning and play while contributing to community engagement and climate resilience. While the nature and scope of features in each space may vary across geographic regions, children's direct contact with nature is a key unifying factor.

Green Stormwater Infrastructure (GSI): The use of soils, plants and other permeable surfaces to mimic natural processes to slow, sink and spread stormwater where it falls, to avoid flooding, pollution and erosion.

Loose parts: The term 'loose parts' was coined by Samuel Nicholson (Nicholson, 1971) to describe open-ended, natural materials that can be moved or carried and taken apart in multiple ways and that inspire children's imagination and creativity on their own terms. Examples include sand, dirt, sticks, branches and logs.

Nature-based Learning (NbL): Nature-based learning or learning through exposure to nature and nature-based activities, occurs in natural settings

and where elements of nature have been brought into built environments, such as plants, animals and water.

Nature-based Solutions (NbS): Nature-based solutions are actions that leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future.

Nature play spaces: A Nature play space is a thoughtfully-designed outdoor environment that prioritises nature as the primary medium for play. These play spaces incorporate the surrounding landscape and vegetation and have natural materials available to play with such as wood, sand, dirt, water, boulders and living elements like trees, shrubs and grasses.

Outdoor classroom: An external shelter or space within the school grounds that creates a practical area for outdoor learning. The space typically includes shade elements with logs, benches or boulders for seating.

Outdoor learning: The Play, Learn and Teach Outdoors Network (PLaTO-Net) defines outdoor learning as any learning that takes place outdoors. Outdoor learning can occur through various leisure, recreational, educational, occupational and health-enhancing activities in natural or built outdoor environments.

Ten steps to greening school grounds

Table 1: Ten steps to greening school grounds

Setting the stage	
1	Organise & set a vision
2	Advocate
3	Build partnerships
4	Identify and develop policies
Moving forward	
5	Select sites & secure funding
6	Co-design, construct and celebrate!
7	Activate for learning and play
Keeping it going	
8	Maintain school grounds
9	Monitor and evaluate
10	Transfer the skills and knowledge

Source: Prepared by Children & Nature Network

Setting the stage:

The process of developing a programme to scale the transformation of school grounds into natural play areas for outdoor learning and play will vary across regions. Differences in historical, cultural, economic, political and environmental contexts will shape working groups, planning methods and decision-making processes. Variations in aspects like governance structures, financial constraints, cultural norms and local climate will invariably impact the approach and the design of green schoolyards. The common thread among all programmes we've learned about to inform this guide is to create school grounds that provide all children—regardless of race, income, ability or identity—with regular access to healthy and natural outdoor spaces. Acknowledging these contextual differences and adapting the steps outlined in this guide will be critical for effective and successful implementation. Although this publication focuses on school grounds, you will find examples of how some organisations have successfully activated nearby or adjacent park-like areas outside of school premises that serve as spaces for connecting and learning in nature during and out of school time.

Building on strengths for success

What drives success in your community? Using the strengths, resources and special qualities present in your community is key to making sure your greening programme lasts and has strong support. By building

on these strengths, communities can create a strong foundation while celebrating previous efforts. Communities can apply the principles of Asset-Based Community Development (ABCD) by identifying local assets—such as the skills and knowledge of residents, local organisations, natural resources and existing infrastructure—to create sustainable and equitable change. For green schoolyards, this can look like engaging local experts, co-designing outdoor spaces with community members, partnering with local environmental organisations for resources, and tapping into city or school district programmes for funding and support.

Guiding questions to help you identify community strengths:

- What existing programmes, initiatives or policies in our community align with the goals of a city-wide green schoolyards programme?
- Who are the key local champions (e.g., educators, city officials, civil society leaders) that could help drive this effort forward?
- What natural, cultural or historical assets make our community unique, and how can they be integrated into green schoolyard designs?
- How have community members—students, families and local organisations—successfully mobilised around similar initiatives in the past?



Figure 3. Children in the municipality of Jundiá in Brazil enjoy an outdoor lesson Image Credit: Prefeitura do Município de Jundiá (2022)

From global to local: Green school grounds in your community

Building a programme that aligns with local values, community needs and cultural practices is essential to grow support and ensure long-term sustainability. This section examines how contextual factors influence the design and implementation of greening school grounds initiatives, providing insights applicable to both urban and rural settings.

Education system

The structure of a country's education system plays a critical role in shaping how a greening school grounds programme is designed, implemented and scaled. In the United States, individual states and municipalities hold significant authority over curriculum standards, funding and school-based policies. This means that programmes tailored to advance local priorities can gain support from a variety of key stakeholders. In contrast, other countries may have more centralised systems where decision-making power rests at the national, state or municipal level, potentially allowing for more uniform implementation across schools. When launching a greening school grounds initiative, it's essential to understand how education governance is organised—whether decision-making lies with the ministry of education, state or provincial departments, or local municipalities—so the programme can align with existing structures and effectively leverage the right points of influence.

Climate

The local climate has a significant impact on the design of outdoor learning spaces, influencing everything from the building materials, type of natural elements and play features. In regions experiencing excessive heat, school ground designs should incorporate additional shading elements, such as trees, and use cooling materials to lower temperatures. Water play features can provide relief

from high temperatures, creating comfortable outdoor environments. Similarly, in humid and wet climates, proper drainage and design features that support moving water are essential to prevent waterlogging and soil erosion.

Water

Schools in water-scarce regions can create vibrant, sustainable greenspaces that support children's connection to nature while conserving valuable water resources. Green school grounds come in many shades of green and yes, sometimes brown. Cities in arid and semi-arid ecosystems can have features that are less water-intensive. In contrast, areas with high rainfall or snowfall need to consider effective drainage systems to prevent flooding and waterlogging. Schools in flood-prone areas can integrate green stormwater infrastructure (GSI) like rain gardens, bioswales, permeable surfaces and tree canopies to capture and filter stormwater, reducing runoff and improving water quality.

Slope and drainage

The unique characteristics of a site can significantly contribute to the play value and functionality of green school grounds. Natural slopes, hills and other elevated areas can be leveraged to create unique, challenging and engaging play environments. Rocks and boulders inherent to the space can serve as climbing elements or natural seating areas. These features add a sense of adventure and connect children with the natural environment while offering beneficial play and risky play benefits. Knowing how much rainfall your site typically receives during an average weather event—and how that water flows across the space—can help identify opportunities to slow and retain water for potential play areas.

Cultural norms and values

Integrating historical elements that hold cultural significance to the community into the green school ground design not only adds meaning to the space, but these elements help create an inclusive environment and value local artists. Symbolic elements can enhance learning while contributing to the vibrancy of the neighbourhood. For example, native plants and culturally significant landscaping elements reflect the local ecosystem and cultural practices. Art murals, signage and community gardens can also serve as spaces for sharing of Indigenous knowledge and connection to the land.

In Caruaru, Brazil, local artist Zé Bezerra was invited to design a sculpture-toy for the park, using materials sourced from the Caruaru market. These locally-inspired choices extended into the children's daily activities: modelling clay was replaced with natural clay, plastic containers were swapped for traditional clay bowls, and EVA foam was substituted with woven straw mats. The resulting natural play space became a deeply meaningful environment that helped revive and celebrate traditional games—once central to childhood and still deeply rooted in the community's cultural fabric.



Figure 4. Children playing on a sculpture created by local artist Zé Bezerra, In Caruaru, Brazil. Image Credit Felipe Corrêa



Figure 5. Local materials purchased at the Caruaru local market for the children's daily activities in the school ground. Image Credit Felipe Corrêa

Key questions:

- Who holds decision-making power in your city's education and planning systems, and how can their support influence the success of your programme?
- What cultural values, community priorities and historical context should be honoured in your green school grounds programme? Are there local artists you can work with?
- What is the local climate and how does it influence how people spend time outdoors?
- How often does it rain and what opportunities exist to capture, store or redirect rainwater for sustainable use?



Figure 6. Patio Vivo, a non-profit organisation based in Chile, turns school grounds dominated by concrete into fertile areas filled with various tree species and shrubs that create habitat for birds, insects and other living beings. Image credit: Fundación Patio Vivo (2022)

1. Organise & set a vision

Establishing a committee with representatives from different agencies is a critical first step in advancing a successful green schoolyards initiative. Greening school grounds generates positive results for partners with a different set of goals across agencies, including education, city planning, public health, parks and transportation. A transdisciplinary team also brings diverse expertise, ensuring that solutions are comprehensive, equitable and sustainable. This initial group will play a pivotal role in setting a vision and goals, determining a strategic direction, and maintaining momentum for the initiative when things get bumpy. By bringing together representatives from different agencies, the team can address policy barriers, leverage resources and align efforts to create lasting impact. Consider starting with a small team of:

- Education administrators such as school directors, counsellors and school maintenance staff;
- Subject matter experts on climate, stormwater management and landscape architecture;
- Government agency representatives from different areas;
- Community leaders; and
- Civil society organisations.

Before approaching members to join your efforts, think about how their role and expertise support the programme and how the programme supports their work. The goal is to ensure that greening school grounds doesn't feel like an added burden but rather an opportunity to advance existing priorities.

a. Identify a project lead

Appoint a project lead to ensure successful coordination, adherence to timelines and effective communication among all team members. Given that government structures vary across countries, the project lead should have a strong understanding of interagency dynamics and the ability to navigate

collaboration across multiple sectors. Ideally, this individual should have experience working across disciplines, facilitating partnerships and aligning stakeholders toward a shared vision for greening school grounds. Their leadership will be instrumental in maintaining momentum and driving the initiative forward.

b. Define roles guided by interests

Defining the roles and responsibilities of each team member enhances collaboration, accountability and long-term success. An effective framework for structuring teams is the GRPI model (Beckhard, 1972) based on Goals, Roles, Processes and Interpersonal Relationships. This model helps teams clarify goals around their shared vision (Goals), assign responsibilities (Roles), establish decision-making structures and workflows (Processes), and foster trust and collaboration (Interpersonal Relationships). For example, in a green school grounds initiative, a city planner might ensure alignment with municipal policies, while educators focus on integrating outdoor learning and transforming the school culture. By applying the GRPI model, teams can proactively address challenges and establish a strong foundation for a successful, sustainable initiative.

c. Create a vision and outline programme goals

Begin by developing a clear vision for green schoolyards in your municipality. A strong vision provides a shared direction, helping to inspire action and guide decision-making. The process of creating this vision should be collaborative and inclusive, engaging the whole team and then sharing it with the community to ensure it reflects the needs and aspirations of the population you are trying to serve. One pathway to developing a vision is to convene key stakeholders to explore the benefits, priorities and opportunities for greening schoolyards in your city. From these discussions, draft a vision statement that articulates the desired outcomes and impact.

For example: “We envision that by 2040, all school grounds in the city of _____ will have nature-filled outdoor learning spaces for children and families to connect with nature.”

Once a vision is established, set some specific goals that outline how you will achieve this vision. A well-defined vision and set of goals will serve as a foundation for design, policy development, funding and long-term care of the nature-filled school grounds.

Table 2: Examples of green school grounds programme goals

Benefit	Sample Goal 1	Sample Goal 2
1. Student health and well-being	Provide fun and engaging outdoor spaces for regular physical activity and play	Support mental health and well-being through daily interaction with nature
2. Academic achievement	Use the schoolyard for regular hands-on learning experiences in science, math and other subjects	Formally integrate outdoor features into the curriculum to enhance learning opportunities
3. Biodiversity and sustainability	Create habitats for local wildlife to increase biodiversity	Implement sustainable practices in the design, maintenance and use of schoolyards
4. Climate	Create shade and shelter for buildings and grounds through planting and structures	Manage water through planting and design, water capture systems, increasing surface permeability and improved drainage
5. Environmental literacy	Foster a deeper understanding and appreciation of the natural environment among students	Promote sustainable practices and awareness of environmental issues

Source: Prepared by Children & Nature Network



Figure 7. Children engage in outdoor learning in a Boston schoolyard that has integrated garden beds in lesson plans.
Image Credit: Christian Phillips Photography

Key questions to consider:

- What do you want green school grounds to achieve in our city?
- What values and priorities should guide your green schoolyards initiative?
- How do green school grounds align with current city plans? For example, you can lean on actions on sustainability or climate adaptation plans.
- Does your team adequately represent all voices from your community, including those historically underrepresented?

Box 1 - Rotterdam | IVN Natuureducatie

The Institute for Nature Education and Sustainability (IVN) is a Netherlands-based organisation focused on connecting people with nature at the local level through various initiatives, including greening school grounds. IVN, in partnership with the city of Rotterdam, lead the green-blue schoolyards initiative, which supports schools in transforming their outdoor spaces into natural areas for play and

learning. This concept originally emerged as a response to families leaving the city. City officials reacted by developing child-friendly spaces and policies. As climate-related challenges grew, the programme evolved and expanded to address issues such as excessive heat, flooding and biodiversity, further strengthening its impact and relevance.



Figure 8. Natural play features in a green schoolyard in Rotterdam Image Credit: Jaime Ehrenberg

“During school time, the green schoolyard is an adventure learning landscape, and after school, it is the green living room for the neighbourhood,” Ian Mostert, IVN Natuureducatie

What motivated your organisation to start the green-blue schools initiative?

The green-blue schoolyard concept developed in Rotterdam offers a whole-school concept. We considered where children live and where there was a lack of outdoor space. It turns out these are often neighbourhoods with challenges related to health, income, water retention

and heat stress. Because schools and public spaces play such an important role in neighbourhoods, interventions in these spaces can make a big difference. This is particularly true when school grounds are open during after school hours.

What is your programme's vision?

Our vision is for all children to grow up healthy and connected to nature. With each generation, the gap between children and nature tends to widen, making it important to close that gap by introducing nature experiences early in life. Each school we work with is also tasked with creating their own vision. We have a selection process that is guided by schools with strong motivation to transform their school grounds. Initially, we selected sites based on data related to health, poverty, child population density and access to public play space. Over time, additional indicators such as water management, soil subsidence, heat stress, biodiversity and obesity rates have informed our approach.

Who are the current partners?

In Rotterdam, our partners include IVN workers, civil servants of the Rotterdam Green Agenda (climate and biodiversity), education leaders and landscape designers specialised in ecology and pedagogy. But most importantly, children! Their ideas are a key ingredient in our work.

What are some lessons learned you can share with others?

Start with a strong, clear vision. Ask yourself: *Why are you doing this work, and who is it for?* It's essential to keep children and nature at the heart of the initiative at every stage. Neither has a political voice, so it's up to us as adults to advocate for their well-being. Whenever challenges arise—whether it's fear of liability, concerns from parents or tension around responsibilities—it's crucial to return to that central focus. A child- and nature-centred vision should guide not only your policies and planning, but also your day-to-day decision-making and implementation.

Source: I. Mostert. Personal communication, March, 2025

2. Advocate

In 2016, the Children & Nature Network's (C&NN) Scientific Advisory Council and staff completed a thorough review of scientific literature on green schoolyards that resulted in compelling data to promote and advocate for the benefits of green school grounds. This resulted in a series of [infographics](#)

available for public advocacy. An expansive research collection related to children and nature is housed in the C&NN Research Library. Articles, research abstracts, webinars and other free sources can be found in the portal.



Figure 9. Outdoor learning garden in Austin Independent School District (USA) Image Credit: City of Austin

Advocating for the integration of nature into school grounds requires a strategic approach to communicate the broad and long-term benefits of green schoolyards. Given the competing priorities that governments, civil society organisations and other stakeholders face, it can be daunting to continuously advocate for the value of greening schoolyards. Find your local champions and get their support! Consider

engaging in public awareness campaigns and host informational sessions that highlight the educational, environmental and social benefits of these initiatives. This includes emphasising the role of nature-filled school grounds in improving academic outcomes, health, community engagement, enhancing climate resilience and creating joyful urban spaces.

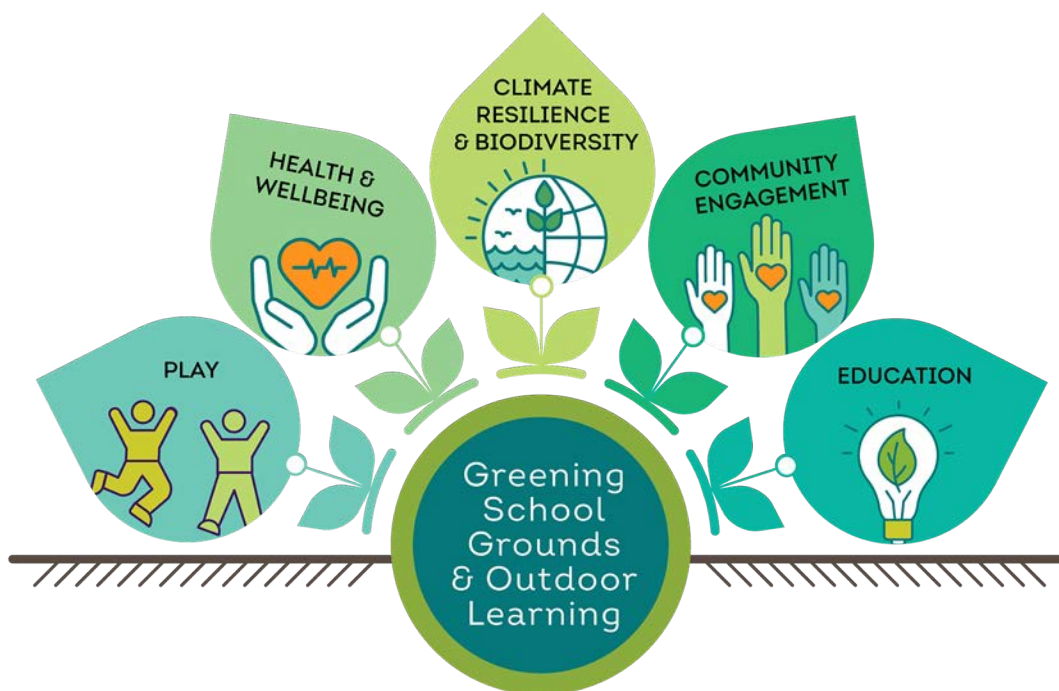


Figure 10. Benefits of green school grounds and outdoor learning. Credit: Children & Nature Network

Building public support through these efforts will make it easier to secure funding, sustain momentum and create long-lasting impact. It is also important to research the priorities and concerns of local stakeholders to tailor the messaging and address any potential barriers to buy-in. Engaging community members and stakeholders early on can create a strong foundation for advocacy and sustained support. Figure 10 names potential benefits of green school grounds and outdoor learning, developed by the Children & Nature Network.

a. Identify key community issues for which green school grounds can become a solution

Does your city have a shortage of parks where families and neighbours can gather? Are challenges like urban flooding, poor air quality or extreme heat making it difficult for children and families to enjoy time outdoors? Green schoolyards offer a multi-benefit solution that cities can approach from a variety of entry points. For example, a city focused on heat islands may begin by planting

shade trees on school grounds. A community seeking safe, accessible play spaces might prioritise redesigning schoolyards to serve both students and neighbourhood families after-hours. Others may start with stormwater management goals, transforming asphalt lots into green infrastructure that absorbs rain and reduces localised flooding.

No matter the starting point, greening school grounds can spark a ripple effect of benefits for health, equity, climate resilience and community connection. As noted in the case study about Rotterdam, the city implemented a subsidy programme to transform school grounds as part of its “Green-Up the City” and “Rotterdam Weatherwise” climate adaptation initiatives, promoting physical activity and community well-being. In 2017, Jundiaí partnered with the Alana Institute’s “Children and Nature” programme, committing to support children’s growth through direct contact with natural environments—especially in urban areas. The following year, the city became the first in São Paulo state to join the Latin American Network – City of Children, deepening its focus on

child participation and perspective in urban planning. Through this network, Jundiaí adopted practices like actively listening to children to inform city decisions, aiming to “give the city back” to its youngest residents by promoting their autonomy and access to shared spaces.

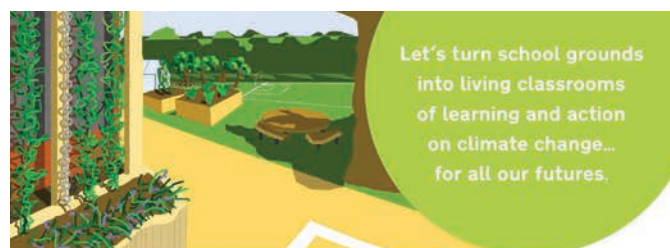
Each municipality’s approach should reflect local priorities and values, with green schoolyards offering a range of interconnected benefits regardless of the initial motivation.

b. Develop an inspiring narrative for multiple audiences

Tailoring your message to the audience’s priorities and values will help you make the case and gain support. For educators and school administrators, emphasise academic outcomes and how green schoolyards enhance student learning, mental health, well-being and engagement. This is especially important after the COVID-19 pandemic highlighted the benefits of outdoor learning for students across the world. Share data from programmes near you, or that are culturally-relevant to your audience, that are already seeing results. For policymakers and funders, focus on the financial and environmental advantages—such as cost savings from natural cooling, improved health outcomes, better air quality, increased biodiversity, enhanced stormwater management and the reuse of local resources. Grounding your message in research while aligning it with the audience’s interests strengthens the case for support.

c. Share successful green school ground initiatives and get your community inspired!

They say a picture is worth a thousand words, but sometimes, it’s worth even more—it’s a story, a feeling, a call to action. Images have the power to transcend language, capturing emotions in a single picture. A child’s joy in a transformed green schoolyard or a teacher engaging her students in a hands-on project



School grounds offer:



Climate
School 180

www.ltl.org.uk

Figure 11. Climate benefits of greening school grounds.
Credit: Learning through Landscapes

—these moments don't need explanation; they stir something deep within us instantly. Where words can be debated, misunderstood or forgotten, an image imprints itself on the mind, evoking empathy, urgency and connection in a way no sentence ever could. Before-and-after photos from successful programmes can be just what others need to picture a transformation in their own neighbourhood.

Leaning on other green school ground programmes also provides valuable insights into best practices, challenges and effective strategies. By taking in those lessons learned from successful models, communities can avoid common pitfalls, build on proven approaches and make adjustments for their local context. Sharing lessons learned fosters collaboration, accelerates progress and strengthens the overall impact of green schoolyard initiatives.

Key Questions:

- What are some of the most pressing challenges facing your municipality or local community?
- In what ways could green school grounds contribute to addressing these identified challenges?
- Are there local stories, experiences or case studies that can help build a strong case for greening school grounds?
- Which organisations or individuals—should be engaged to support or advance this effort?
- Is your team equipped to respond to critical questions or concerns that may arise during the engagement process?

3. Build partnerships

The success of green schoolyard initiatives relies heavily on collaborative partnerships that bring together stakeholders with a shared vision of increasing access to nature. This work cannot be done alone; it thrives when diverse partners—such as municipal agencies, neighbourhood associations, non-profit organisations and local businesses—come

together to contribute their expertise, resources and support. Partners can provide critical support in areas like maintenance, funding and community engagement, helping to ensure that green schoolyards remain vibrant and accessible for the long term.



Figure 12. The Oasis green schoolyard initiative in Paris brings together diverse partners across sectors to transform school grounds into vibrant green spaces that cool neighborhoods. Image Credit: Ville de Paris

Which partners are you already working with in your school ground discussions? Which partners should your group be working with? Begin by identifying community leaders, government officials across agencies, researchers and other potential partners. Discuss the benefits of a green school ground programme and how their priorities align with greening school grounds. Be transparent about

the programme's goals, expected outcomes and potential challenges. Building trust is essential for fostering long-term collaborations. Lean into those with generational knowledge, such as Indigenous communities. Recognising and integrating their expertise not only strengthens your initiative but also helps create a more inclusive and effective approach to environmental stewardship.

- Education leaders
 - o Head of school
 - o Curriculum and pedagogical coordinator
 - o Outreach coordinator
 - o Director of operations
 - o Custodial and maintenance staff
- Government agencies
 - o Public parks department
 - o Health department
 - o Planning department
 - o Sustainability and biodiversity
 - o Water management
- Civil society organisations (CSOs)
 - o CSOs are key for enhancing local capacity
 - o After-school programme providers
 - o Indigenous communities
- Universities
 - o Universities can also support data collection and impact assessments, helping to build a case for funding and policy change. Additionally, students can engage through internships, volunteer projects and service learning, contributing to maintenance, programming and long-term sustainability of the schoolyards.
- Local foundations
 - o In addition to funding, local foundations can provide strategic guidance and connections to other local resources. They often have a deep understanding of community needs and priorities, which can help align green schoolyard projects with broader social and environmental goals.

When you are working at the school site level, involving a diverse group of stakeholders—such as parents as volunteers, education leaders and even the school janitor—is essential. Including the janitor, for example, helps ensure they understand the pedagogical vision behind the space, rather than being seen only as someone who maintains it. Have early discussions about the level of ambition, so schools can clearly understand the implications of their choices in terms of time, budget and team commitment. This allows them to determine which elements can be developed collaboratively with students and the community, and which might need to be externally sourced.

Key questions:

- What are some shared values among representatives from each partner organisation?
- What resources (financial, human or otherwise) can each organisation commit to this partnership?
- How will decisions be made?
- How will potential conflicts be addressed?
- What risks or challenges do you foresee from each partner?

4. Develop policies

Children cannot fully benefit from outdoor learning and play if restrictive policies limit their access to these spaces. Conversely, without supportive policies, green school grounds often face significant challenges—such as inconsistent funding, fragmented implementation and limited long-term sustainability. Strong policy frameworks can provide the momentum and infrastructure needed to scale and maintain these spaces, while also unlocking funding opportunities that empower communities to create and care for them. Most current policies supporting green school grounds exist at the city or school district level, with a few emerging examples at the state level.

Municipal leaders can help champion policies that provide dedicated funding, technical assistance, and long-term planning for nature-rich schoolyards. Cities such as Paris, France, and São Paulo, Brazil, have adopted policies that integrate green infrastructure, climate adaptation and outdoor learning and play into school planning. For example, Paris' Oasis Schoolyards initiative is redesigning school playgrounds across the city to combat urban heat and improve student well-being. In São Paulo, the Alana Institute's Children and Nature programme, in partnership with Van Leer Foundation's [Urban95 programme](#), has worked with policymakers to integrate greenspaces into school environments, enhancing learning and community engagement.

a. Identify current policies that support greening school grounds

While green school grounds are not typically integrated into national infrastructure policies, planning processes and funding streams, you will be surprised how many policies have the potential to support your efforts. We've seen some creative strategies across countries to help leverage funding. Don't be discouraged! School leaders can tap into municipal sustainability plans, climate action ordinances, nutrition guidelines and wellness

programmes, among others, to help underpin their greening efforts.

For example, local health departments or educational authorities may have set guidelines related to physical activity and outdoor play. Assessing the status of policies, action plans, and legislation that support or deter opportunities for green school grounds is fundamental to ensuring children, educators and neighbours will indeed use the new school grounds as intended. A 2022 survey conducted by The Children & Nature Network revealed that 25% of programme staff that took the survey relied upon policy to support their local school ground greening programmes. Overall, the policies supporting greening of school grounds and outdoor learning around the world fell into four types: national education policy, local education policy, national climate policy and local climate policy. While policies can sometimes give the impression of progress, without vision, commitment and tangible action, they can remain performative rather than transformative.

b. Influence policy changes using data

A review of existing policies, regulations and guidelines related to green schoolyards can serve as a baseline to expand your greening efforts. This exercise may also reveal that certain regulations or established practices should be updated or amended. Many existing protocols related to risk management, liability, construction, maintenance and education were developed under traditional frameworks that may not yet reflect evolving research on the benefits of outdoor play, learning and healthy risk-taking for child development. Addressing these barriers requires a thoughtful and evidence-based approach—leveraging scientific research and successful case studies to advocate for policy adaptations that support nature-rich school environments. Data serves as a foundation for evidence-based policymaking. It empowers policymakers to make informed decisions

that are grounded in scientific understanding, enhancing the effectiveness of policies aimed at addressing a particular issue.

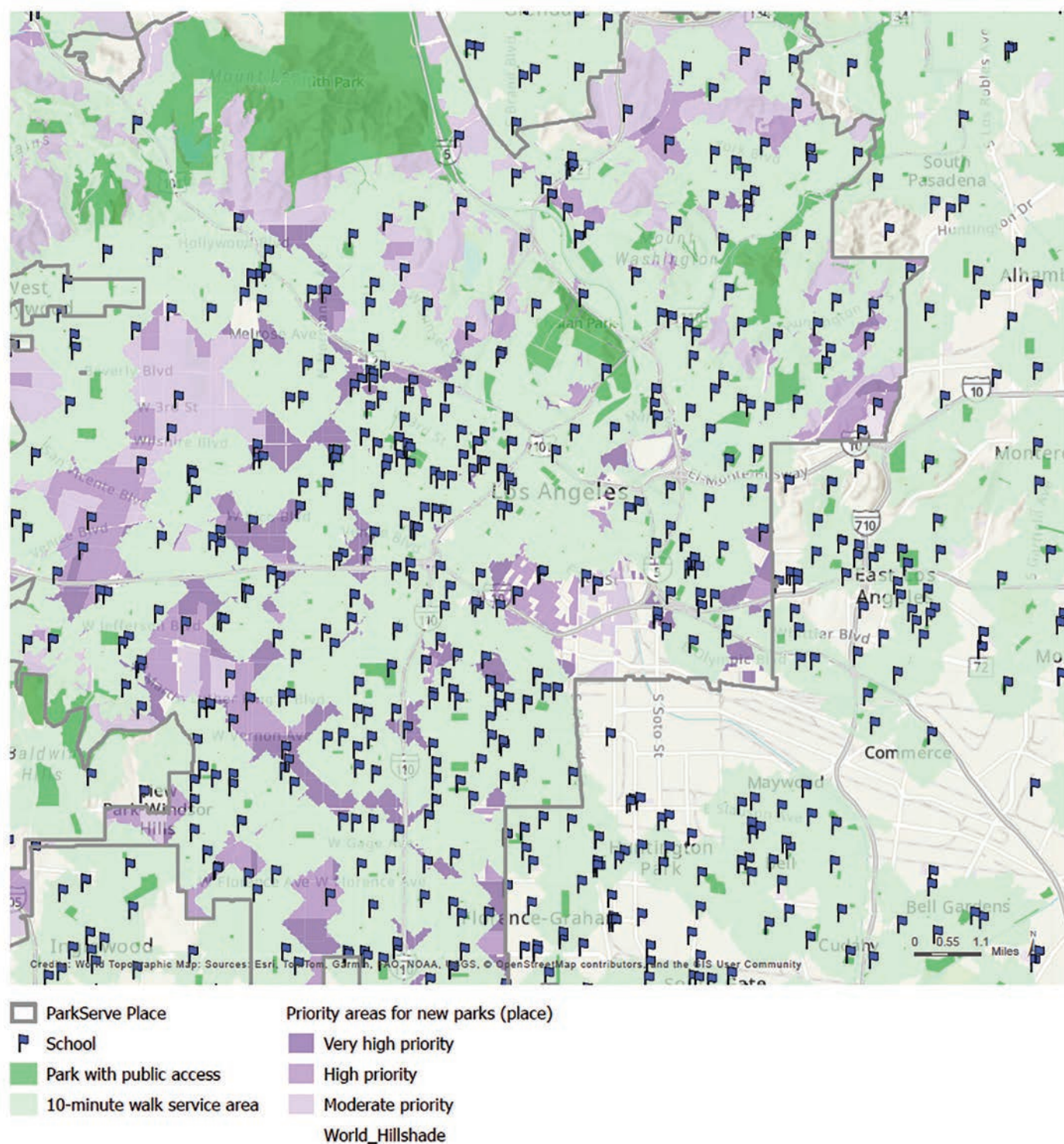


Figure 13. Map created by the Trust for Public Land showing areas with most need for park space in Los Angeles, California. Image Credit: Trust for Public Land

Geographic Information Systems (GIS) mapping

GIS mapping can support the teams who are identifying priority locations for greening school grounds projects based on demographics, economic factors, environmental indicators and social vulnerability data. This exercise can help teams determine where young children who have the least access to nature are. Cities use these maps to prioritise park and natural spaces programming, plan renovation and acquisition projects, inform city plans, apply for funding and develop public-facing messages to promote greater access to nature for young children.

Cities from around the world can use this approach to understand and act to resolve disparities in access to nature for children of other ages, or all children.

The process begins by assembling the right partners, accessing local data and utilising existing expertise.

Suggested partners include:

- City departments with access to local demographic, education, environmental and socio-economic data
- School administrators
- GIS consultants that can help analyse data and develop maps
- Volunteer organisations that can help corroborate data with in-person assessments
- Universities or students to research

Box 2 - Paris | Les Cours OASIS

[Les Cours OASIS](#), or the ‘OASIS schoolyard project’, started in 2018 as a component of the City of Paris’ [Climate Adaptation Plan](#) and resilience strategy. The programme aims to transform urban schoolyards into nature oases for the benefit of children, teachers and residents nearby. In 2019, the project received the financial support of the Urban Innovative Actions (UIA) programme of the European Union, which helped implement a renewed way of designing the schoolyards, featuring more natural materials and play amenities. Two main pillars of the OASIS schoolyards are the creation of “cool urban islands” to help reduce the heat trapped by the built environment, and the innovation of pedagogical approaches supported by natural elements and features, such as rainwater collectors that feed learning rivers, wooden playing structures, willow tree huts, tunnels and many more. Read more about the features in the [OASIS Schoolyards Recommendations Booklet](#).

“Oasis courtyards are a new way of thinking about space at a child’s level, at the service of their well-being, and as a real lever for development and fulfilment.” Josephine Bussiere



Figure 14. OASIS Schoolyard transformation in the City of Paris Image Credit: Brenda Kessler

“Everyone participates [in the schoolyard]. The whole community. On Saturday mornings, we have a public access gate through the street. As a result, people from the neighbourhood can come to the courtyard just to read, to relax, to see the new plantings. So there are also people from the neighbourhood who are invested in this schoolyard,” says Béatrice Madignier, a pre-elementary school teacher at Emeriau school in Paris.

What local or national policies did the Le Cours Oasis programme leverage to support the transformation of school grounds?

The oasis courtyards programme was launched as part of the City of Paris’ resilience strategy voted in 2017. The main objective of the oasis courtyards was to provide islands of coolness and protect the most vulnerable, including children. Naturally, the oasis courtyards, with their aim of renaturing and despoiling, also respond to three other structuring plans of the City of Paris: the climate plan, the biodiversity plan and the “Paris Pluie” plan, focused on rainwater management. However, the second essential aspect of the courtyard oasis programme is to contribute to the development, well-being and fulfilment of children. This is why oasis courtyards are one of the flagship initiatives of the Local Educative project.

How did these policies influence the programme's design and implementation?

The Climate Plan, Biodiversity Plan and “Paris Pluie” plans set out a number of rules governing the development of oasis courtyards. For example, the Biodiversity Plan includes important requirements concerning the origin of plants, to ensure that they are as local as possible. Another example is the Paris Pluie plan that makes oasis courtyards subject to stormwater management rules and makes projects increasingly ambitious. Since 2024, to ensure that each project is ambitious and complies with the plans, the City of Paris has drawn up a design charter in addition to the recommendations booklet, setting out the rules of the various plans mentioned above.

Can you share a little about the funding model and how these policies have aided in securing funding, political support and long-term sustainability?

The oasis courses are 100% publicly-funded. Three main sources of funding are involved: the budgets of the district town hall, the central budget of the City of Paris and the participatory budget. The City of Paris is also applying for national subsidies, including the Green Fund and the Seine Normandy Water Agency. The various plans mentioned above have made it possible to establish the Cours oasis as a flagship action that cuts across a range of public policies including biodiversity, rainwater management, education and public health, thereby establishing the legitimacy and sustainability of the Cours oasis over time.

Source: J. Bussiere. Personal communication, March, 2025

5. Select sites & secure funding

Too often, the decision about which schools to begin with is made by chance—not strategy—which can unintentionally leave behind the schools in most need of a transformation. When site selection happens “organically”—based on convenience, existing interest or chance—it often fails to advance equity or drive systems-level change. A structured assessment, on the other hand, provides comprehensive, concrete data about the needs and potential impact at each

school site. This information empowers teams to make informed decisions, ensuring that schools with the greatest need and opportunity are prioritised. It also equips teams with the data needed to engage policymakers, allocate public resources strategically, and build strong partnerships and funding support. Ultimately, this approach puts equity at the centre of the work and strengthens the foundation for long-term, systemic transformation.



Figure 14. In Belgium, schoolyard transformations are turning gray, paved spaces into lush, nature-filled environments, creating healthier places for children to play and learn Image Credit: Frederik Beyens

a. Assessing for priority areas

Factoring in indicators such as income levels, access to greenspace, environmental risks (e.g., heat islands and flooding) and health disparities can help identify communities that would benefit most from enhanced access to nature. Prioritising sites based on this

data ensures that resources are directed toward addressing environmental and social inequities. Being open about the site selection process with community members will help build trust and ensure that the improvements reflect the needs and priorities of the community.

Once you have selected potential sites, engage directly with school teams to assess their level of commitment and capacity to participate. This could involve visiting sites in person, conducting readiness surveys and arranging meetings with school leadership to clarify expectations and confirm interest. For selected schools, provide a detailed explanation of next steps. For schools not selected, offer feedback on how they might strengthen future applications and keep them informed about future opportunities.

b. Funding

Funding models for greening school grounds vary widely across communities, reflecting different local priorities, capacities and partnerships. In some cases, programmes provide initial funding for site transformation, but ongoing maintenance and educational integration are left to individual schools to manage. Other communities adopt more

collaborative approaches, such as public-private partnerships or shared use agreements with city agencies, particularly when school grounds are open to the public after school hours. These models help distribute responsibilities and resources more sustainably over time.

Policies to enhance resilience, mitigate the impacts of climate change and create sustainable urban environments can be potential catalysts for a school greening programme. In the previous section, we shared how in 2019, the OASIS green schoolyard initiative in Paris received the financial support of the Urban Innovative Actions (UIA) programme of the European Union, which helped implement a renewed way of designing the schoolyards, featuring more natural materials and play amenities. Your programme development goals could consider developing a funding mechanism that invites schools to transform their grounds into nature oases that advance multiple goals.

Funding sources for green school ground programmes

Government budgets:

City agencies allocate funds from their own budgets to finance urban greening and climate change adaptation initiatives. Many cities worldwide have developed and implemented climate action plans that outline strategies, policies and actions to create more sustainable and liveable urban environments. Greening school grounds can often support many of the goals outlined in such plans, making this one of the most viable (and sustainable!) funding sources.

Grants or subsidies:

Grants and subsidies for green school grounds can stem from regional, national and international sources. Government agencies, intergovernmental organisations and foundations often offer funding opportunities for climate adaptation related projects.

Public-private partnerships (PPPs):

Partnerships with private entities to fund and implement climate adaptation initiatives. Public-private partnerships may involve joint investments, shared responsibilities and innovative financing models to leverage both public and private resources.

Government bonds:

Cities often issue bonds to finance large-scale infrastructure projects, including those related to climate adaptation projects. The bonds are repaid over time by local taxpayers.

Table 3: Elements to consider in a cost estimate

Budget category	Example line items	Description
Site preparation	• Demolition and debris removal • Site grading and levelling • Soil testing and amendments	Costs for clearing and preparing the site for construction
Design and planning	• Landscape architect fees • Community engagement meetings • Permit and zoning fees	Professional services and regulatory costs associated with planning the project
Play structures	• Natural play features (e.g., logs, boulders) • Play equipment (e.g., swings, slides) • Surfacing (e.g., mulch, wood chips)	Costs for purchasing and installing play equipment

Landscaping	• Native plants and trees • Sod or seed for grass • Mulch and soil	Materials and labour for planting and maintaining vegetation
Accessibility and infrastructure	• Pathways and walkways • Ramps and accessibility features • Lighting and signage	Costs to ensure the park is accessible and easy to navigate
Seating and gathering spaces	• Benches and picnic tables • Shade structures • Trash and recycling bins	Furniture and infrastructure to support visitor comfort
Water management	• Irrigation systems • Rain gardens and drainage • Water fountains	Systems for managing water use and runoff
Programming and activation	• Outdoor classroom supplies • Professional development for educators	Resources to support school use and programming
Maintenance and operations	• Tools and storage for maintenance • Volunteer coordination and training	Ongoing costs to keep the space clean and functional
Contingency	• Unforeseen costs • Weather delays • Emergency repairs	Unexpected expenses (typically 10–20% of the total budget)

Source: Prepared by Children & Nature Network

Box 3 - Limburg | Provinciaal Natuurcentrum

What began as a small pilot programme has now transformed dozens of schools across Limburg province, Belgium. The success of the pilot project prompted the creation of new policies and widespread support to continue greening school grounds throughout other provinces. The programme led by [Provinciaal Natuurcentrum](#), a field service of the provincial government, and MOS, an organisation that offers consulting services for greening school grounds, has enabled schoolyard transformations into vibrant greenspaces for play, learning and community engagement. Every primary or secondary school in Limburg that works on sustainable development can become an [MOS](#) school and can get counselling (or coaching) and funding for greening their school ground. The planned interventions must strengthen local biodiversity and promote well-being and enable nature-based education. Each school takes the process into its own hands to increase nature and reduce hard surfaces. Examples of possible interventions:

- Removing hard surfaces from the playground
- Planting native trees, shrubs and flowers, facade greenery or a flower meadow
- Creating a pond and outdoor classroom
- Providing of loose natural materials and other natural play features
- Creating wild animal habitats, such as nesting boxes and bee hotels, a branch pile or a wood or leaf pile

Get inspired with the book [Green School Grounds? Naturally! \(2024\)](#) published by Provinciaal Natuurcentrum



Figure 15. Schoolyard transformation in Mozaiek school in the Province of Limburg, Belgium.
Image Credit: Provinciaal Natuurcentrum

How much funding is available per school project?

Through this initiative, eligible schools can apply for subsidies ranging from €5,000 to €15,000, which covers up to 90% of approved project costs. To qualify, schools must submit proposals that meet specific criteria focused on adding natural elements and enhancing biodiversity. Once approved, the subsidy is paid in two instalments: 70% is provided as an advance, and the remaining balance is paid after project completion, within two years.



*Figure 16. Schoolyard transformation in primary school Robbert, Limburg, Belgium.
Image Credit: Robin Reynders, Limburg Province*

What makes this greening model unique?

What sets this model apart is its emphasis on both funding and ongoing support. Each greening subsidy is paired with intensive guidance from MOS coaches, who assist schools throughout the planning and post-implementation phases. There is a strong emphasis on improving biodiversity through thorough consultancy.

What has been the impact of this work thus far?

Thanks to this combination of financial support and hands-on guidance, 70 schools have already transformed their grounds, planting over 9,000 trees and shrubs, removing 14,200 m² of hard surface and creating enriching outdoor environments for more than 18,400 students and 2,350 teachers.

Source: J. Lambrix. Personal communication, March, 2025

6. Co-design, construct and celebrate!

The design of school grounds should mirror the educational philosophy, core values and culture of the school community. Understanding the community's desires and needs and integrating their voices in the planning and design processes is necessary to produce a fairer, more inclusive and truly collective project that will live up to its mission. We began this guide by defining green school grounds as nature-filled outdoor spaces that offer students, teachers, parents, and neighbours places to play, learn, explore and grow. These dynamic spaces can include a wide array of features; outdoor classrooms, native gardens, stormwater capture, play structures, nature play areas with loose parts, vegetable gardens, trails, trees, water features and much more.

a. Co-design with community; centring children!

Give children a voice! Children express themselves in varied ways, and as the users of the school grounds, we must ask and observe where, how, with whom and with what elements they play to understand how we can make better use of the space. There are several excellent resources to support this process. The [Design for Play guide](#) by Play England outlines practical approaches on how to involve children in design through observation, conversation and creative activities. The [UNICEF Child-Friendly Cities Initiative](#) also offers frameworks for youth participation in urban planning, which can be adapted to schoolyards. Whether through storytelling, drawing, mapping or co-design workshops, these tools help turn children's ideas into tangible design elements that make play spaces more vibrant and equitable.



Figure 17. Children in the Netherlands observe images with elements of green school grounds.
Image Credit: IVN Natuureducatie

Ideas to engage children in the design process ([IVN Natuureducatie](#) Green-Blue Schoolyards Roadmap)

- Go on a field trip to another green playground, natural play area or nature area, such as a forest, beach, dune area or river. Here, you can find all kinds of elements that could be deployed in a playground.
- Create a sandpit in which pupils can design their own playground. With sand and soil, they can create height differences and loose materials such as twigs, moss and clay can serve as the elements of the playground. Add patches of blue fabric as well to serve as water.

b. Work with designers experienced in pedagogical and ecological concepts

Green schoolyard designs are as diverse as the communities they serve, shaped by geography, climate and local culture. From native gardens and edible landscapes to water play features, climbing structures, outdoor classrooms and winding trails, these spaces can take many forms. Whether incorporating natural elements like logs and boulders or built features like playground equipment and seating areas, each design offers unique opportunities for learning, play and connection to nature.

Renowned American educator and academic, David Sobel, spent many years observing and studying children's behaviour in different natural settings, with children of all ages and in several different cultures. In his book, *Childhood and Nature: Design Principles for Educators* (2008), Sobel suggests seven design principles, or play motifs, that encapsulate common patterns and behaviours in children. These principles, he notes, are not developmental, but rather run through all stages of early childhood, middle childhood and adolescence. Each principle manifests itself in a different way during each developmental stage.

Table 4: Childhood and Nature: Design Principles for Educators by David Sobel

Principle	What David Sobel says:
1. Adventure	<i>"Environmental education needs to be kinaesthetic, in the body. Children should stalk, balance, jump and scamper through the natural world. Activity with a physical challenge component speaks directly to children via the mind/body link."</i>
2. Fantasy and imagination	<i>"Young children live in their imaginations. Stories, plays, puppet shows, and dreams are preferred media for early childhood. We need to structure programmes like dramatic play, we need to create simulations in which students can live the challenges, rather than just study them."</i>
3. Animal allies	<i>"If we aspire to developmentally-appropriate science education, then the first task is to become animals, to understand them from the inside out, before asking children to study them or save them."</i>
4. Maps and paths	<i>"Finding shortcuts, figuring out what's around the next bend, following a map to a secret event. — Children have an inborn desire to explore local geographies. Developing a local sense of place leads organically to a bioregional sense of place and, hopefully, a biospheric consciousness."</i>

5. Special places	<i>“Almost everyone remembers a fort, den, treehouse or hidden corner in the back of a closet. Especially between ages 8 and 11, children like to find and create places where they can hide away and retreat into their own found or constructed spaces.”</i>
6. Small worlds	<i>“From sandboxes to dollhouses to model train sets, children love to create miniature worlds that they can play inside of. Through creating miniature representations of ecosystems, or neighbourhoods, we help children conceptually grasp the big picture. The creation of small worlds provides a concrete vehicle for understanding abstract ideas.”</i>
7. Hunting and gathering	<i>“From a genetic perspective, we are still hunting and gathering organisms. Gathering and collecting anything compels us; searching for hidden treasure or the Holy Grail is a recurrent mythic form. Look at the success of ‘Where’s Waldo’. How do we design learning opportunities like treasure hunts? ”</i>

Source: Sobel (2008)

It is not the intention of this guide to provide an in-depth exploration of individual site design. We recognise that there are already numerous high-quality resources available that outline ideas, strategies and processes for designing single projects. Instead, our focus is on supporting broader systems change and

community-wide efforts. For those seeking guidance on specific site-level design, we have compiled a list of recommended resources in the table below, which offer valuable insights and practical tools for creating successful, nature-rich spaces.

Table 5: Natural outdoor spaces design guidelines

Organisation or Author	Title of Publication
Gamson Danks, Sharon	Asphalt to Ecosystems: Design Ideas for Schoolyard Transformation. (2010)
City of Paris, France & partners	Oasis Schoolyards Recommendations booklet for transforming schoolyards

Instituto Alana & Criança e Natureza	Guide to Outdoor Learning
Instituto Alana & Criança e Natureza	Guide on Natural Play Structures and Furniture
City of Austin, Texas, USA & partners	Nature Play Guidelines: Guidance On Incorporating Nature Play In Public Spaces
Moore, Robin and Cooper Marcus, Clare	Healthy Planet, Healthy Children: Designing Nature into Childhood. (2008).
Oakland Unified School District, California, USA	Living Schoolyard Guidelines

Source: Prepared by Children & Nature Network

c. Celebrate with the community!

Celebrating both big and small achievements with the community is a powerful way to build momentum and strengthen connections. Whether it's a ribbon-cutting for a new green schoolyard or a small gathering to mark a milestone, these moments of recognition foster pride, ownership and continued collaboration. A creative example comes from Sint-Paulus, a primary school in the heart of Kortrijk, Flanders, Belgium. To celebrate their progress, the school wrote and performed an original song that highlights their achievements and brings their community's journey to life—an inspiring reminder of what's possible when people come together with joy and purpose. [Watch the video.](#)

In 2024, the school was selected as one of the top 3 in the World's Best School prizes by T4 Education and in 2023 the school won the New European Bauhaus Prize, awarded by the European Commission with its school ground project: Klimaatspeelplaats. This project set the benchmark for greening school grounds across Belgium and is inspiring schools across the world to rethink their school grounds.

Box 4 - Chile | Fundación Patio Vivo

Fundación Patio Vivo is a non-profit organisation in Chile that aims to give new meaning to schoolyards across all grade levels, promoting a cultural change that supports children and adolescent playing, learning and growing in contact with nature. Patio Vivo helps improve students' well-being and quality of life by transforming school grounds in the most vulnerable communities, which typically lack easy and safe access to green areas. Patio Vivo turns spaces once dominated by concrete into fertile areas filled with various tree species and shrubs that create habitat for birds, insects and other living beings. Recognised by UNICEF as one of seven innovative initiatives for early childhood, Patio Vivo has transformed more than 100 school grounds in nine different regions of Chile.

"The schoolyard offers children the opportunity to discover a sense of place and to explore along with nature, which offers infinite ways of learning."

Angela Ibáñez, Executive Director, Fundación Patio Vivo



*Figure 18. Children play with multifunctional structures in a newly transformed schoolyard in Chile
Image Credit: Patio Vivo*

The design features vary from school to school, including things like edible gardens, fruit orchards and multifunctional structures that invite children to play freely and with beneficial risk. On the school grounds, children exercise and develop coordination by running, hanging from bars and ropes, going up and down slopes, and bending down to pass through tunnels. The new spaces aim to spark imagination and creativity, allowing children and adolescents to develop integrally thanks to the environment's multiple learning opportunities.

What principles guide Patio Vivo's design process?

At Patio Vivo, we understand the design of schoolyards as an articulation where space, community and school culture are interwoven. We start with a diagnostic process that recognises the school's culture, the territory and the real uses of the yard, identifying how the space is inhabited and activated across multiple dimensions: pedagogical, social, ecological, and cultural. We design environments that meet functional needs, while reflecting each school's educational values. Our versatile structures—like climbing frames that support risky play and physical education, or hills that inspire free play and performances—balance the needs of all users. Throughout, we emphasize play and nature connection, knowing that for many children, the schoolyard is their primary daily opportunity to play.

How does your organisation engage students, educators and community members in the design process?

We engage the community at three key moments. The first is during the diagnostic and design phase, through participatory workshops where we activate body language, play and connection with childhood to collectively imagine the experiences we want to happen in the yard. In some cases, we also involve the community in the planting stage, depending on the context. However, the most important engagement happens through the use of the space. We create schoolyards that allow children to design and invent their own games. We avoid directed play structures—like boats or houses—or any elements with predetermined ways of use, such as climbing a ladder and sliding down. Instead, we design open-ended spaces that encourage free play and imagination, where each play experience is different: children design their own game every time.

Source: A. Ibañez. Personal communication, March, 2025

7. Activate for learning and play

The 2020 World Conservation Congress Resolution on the [Role of children and youth in nature conservation](#) acknowledges “the need for children and youth to be aware of environmental issues, to care about and understand them, and to take action,” while emphasising the need to incorporate “education and formal and non-formal urban and peripheral green areas into cities as spaces to increase people's contact with nature and as a strategy to promote knowledge of biodiversity and the physical and mental health of city dwellers, particularly children and youth.”

To truly realise this vision, greenspaces must be intentionally created and activated in places where children already spend a significant portion of their daily lives—especially in and around schools—ensuring that nature connection becomes a seamless

and accessible part of their everyday experiences. However, creating a green schoolyard is just the first step—ensuring it's actively used as intended is what truly brings the benefits to life. While the famous line from the 1989 movie *Field of Dreams* says, “If you build it, they will come,” the reality for schoolyards is a bit different. Simply building an outdoor space doesn't guarantee that students, teachers and the community will use it to its full potential. Intentional activation—through programming, formal curriculum integration and community engagement—is key to making these spaces vibrant hubs for learning, play and connection. Without it, a beautifully designed schoolyard can sit underutilised. By planning for activation from the start, we can ensure that green schoolyards fulfil their purpose, enriching education, health and community well-being for years to come.

Box 5 - Sierra Leone | Biodiversity and Renewable Energy Learning Centre

Opened in 2014 with the support of a modest \$10,000 grant from the Irish Embassy, the Environmental Foundation for Africa's (EFA) Biodiversity and Renewable Energy Learning Centre in Sierra Leone has grown into a vital hub for environmental education, connection to nature and community engagement. Originally a small initiative, the Centre has since welcomed hundreds of children, serving as a powerful space where student ambassadors immerse themselves in nature, learn about biodiversity and renewable energy, and return to their communities to share their knowledge and inspire action.

Situated within a 15-acre forested estate on the edge of the Western Area Peninsula Forest Reserve, south of Freetown, the Learning Centre is the first of its kind in West Africa. The Centre provides hands-on, nature-based learning experiences that deepen children's understanding of biodiversity, climate change and sustainable practices. It serves as a vital resource for both local schools and the broader community, inspiring a culture of environmental responsibility.

In a region facing serious deforestation challenges, the Centre plays a critical role in fostering deep, personal connections to the natural world—laying the groundwork for a generation of environmentally-conscious leaders committed to protecting and restoring Sierra Leone's ecosystems.



Figure 19. Children in Sierra Leone engage in an environmental education activity at the Biodiversity and Renewable Energy Learning Centre.
Image Credit: Environmental Foundation for Africa



Figure 20. Children in Sierra Leone engage in an environmental education activity at the Biodiversity and Renewable Energy Learning Centre
Image Credit: Environmental Foundation for Africa

Source: T. Garnett. Personal communication, March, 2025

a. Start with educators

Invite educators to reflect on their own childhood memories and connections with nature. These memories—often full of wonder, freedom, and exploration—can be powerful motivators. In revisiting them, many may realise how rare those experiences have become for children today. This reflection can inspire a desire to recreate meaningful outdoor experiences for the students they serve, making schoolyards a special place where learning and joyful memories come together.

We know from research that outdoor learning opportunities help improve student outcomes. Taking learning outdoors helps students ask better questions and connect what they learn in class to the world around them. Yet not all educators feel confident leading outdoor lessons. A nature-rich schoolyard is just the first step. Ongoing, high-quality professional development is essential to help teachers feel prepared and excited to teach outside. That's why it's important to bring school leadership, including curriculum developers, into the planning process early. Their insights into how teachers might use the space will directly inform its design. When educators feel heard and supported, they're more likely to use the space. And research shows that outdoor teaching can boost their job satisfaction, well-being, and resilience.

Consider creating a community of practice with fellow educators interested in adding nature to school grounds and outdoor teaching. Collaborate, share experiences and learn from each other to build a supportive network. International networks like these already exist, such as Teachers for the Planet and International School Grounds Alliance (ISGA). Through a localised network, educators and outdoor education advocates can share ideas, support each other with challenges unique to the region, and build momentum for the growth of the initiative.

b. Green school grounds & curriculum

In her seminal work, *Special Places; Special People: The Hidden Curriculum of School Grounds* (1994), Wendy Titman explores how the design and management of school environments subtly convey values and expectations to students, a concept she terms the "hidden curriculum." Titman's research reveals that school grounds significantly influence children's attitudes and behaviours, often imparting lessons beyond the formal curriculum. As you craft your programme, make sure to collaborate with educators and designers to maximise learning opportunities.

c. Open for community use outside of school hours

In dense and crowded cities, space to enjoy outdoor time is always limited, meaning built and natural environments must serve as many needs and uses as possible. School grounds have the potential to fill in the gap and support added park space where it is most needed. Extending the benefits of green school grounds to neighbours and community members has been shown to increase community cohesion while giving families without access to a quality park nearby the opportunity to enjoy outdoor time.

8. Maintain school grounds

Maintenance and long-term management considerations are an essential aspect of successful outdoor learning environments. You may notice that this topic was also addressed in step 6. That is because when developing a design for green school grounds, you need to consider maintenance needs before making any final decisions. Including

maintenance staff in the design phase is especially important, as they will play a critical role in preserving the intended condition of the space over time. Aligning the long-term goals of the project with the maintenance approach will help ensure that the schoolyards remain vibrant and sustainable.



*Figure 21. Students engage in outdoor activities and lessons at the school garden in Zilker Elementary School in Austin, Texas, USA.
Image Credit: National Wildlife Federation*

a. Embrace a little ‘mess’

Nature-filled school grounds shouldn’t require excessive maintenance to keep them safe and functional for public use. In fact, reducing maintenance in certain areas of the school grounds can enhance the play value of some elements and strengthen children's connection to nature. Think of

overgrown native grasses, and piles of leaves and twigs that can harbour creepy crawlies that can make your schoolyard a biodiversity hotspot. Shelter and hibernation space provided by these messy spots are important. Spaces that are neat, tidy and overly manicured are not always ideal. Intentionally leaving some areas “messy” can create richer and more engaging play experiences.



Figure 22. Certified Wildlife Habitat by the National Wildlife Federation Image Credit: National Wildlife Federation

Use interpretative signage to help understand why things look the way they do. *"Messy = More Fun! Sticks, leaves and loose parts spark creativity, problem-solving and sensory exploration for children."* Make the messaging clear, positive and inviting — helping visitors see the beauty and purpose behind the natural look rather than viewing it as neglect.

b. Incorporating low-maintenance design principles

Choose native and drought-tolerant plant species that are well-adapted to the local climate or grouping plants with similar water and maintenance to simplify irrigation and care. Natural elements like logs, boulders and tree stumps require little to no maintenance compared to plastic or metal equipment. For example, a climbing area made of large tree stumps and logs offers durability and minimal upkeep. Reducing the amount of grass that

needs mowing lowers labour and fuel costs. Convert large lawn areas into wildflower meadows or no-mow zones with native grasses. Talk to staff to ensure they are trained to manage the proposed elements related to their departmental responsibilities. This will ensure that the new spaces will serve many generations to come.

c. Establish shared agreements between relevant entities

Shared use agreements between two or more organisations help share maintenance needs for green school grounds and outdoor learning spaces. These agreements are commonly established between public entities, such as schools, local governments and civil society organisations, outlining the responsibilities for the upkeep and use of the spaces.

Box 6 - Benefits of shared use agreements

Shared maintenance responsibilities:

The agreements should define who is responsible for routine maintenance, repairs and upkeep. Clearly defined roles help prevent misunderstandings and ensure that maintenance tasks are addressed promptly.

Cost sharing:

Shared use agreements often include provisions for sharing the costs associated with maintaining the shared space. Parties involved can contribute funds based on an agreed-upon formula or as a percentage of overall costs. This shared financial responsibility helps ensure that maintenance needs are adequately funded.

Scheduled maintenance plans:

Agreements may specify scheduled maintenance plans, outlining regular upkeep activities such as cleaning, landscaping and minor repairs. Having a predetermined maintenance schedule helps in proactive planning and ensures that the shared space remains in good condition.

Usage guidelines and policies:

Shared use agreements typically include guidelines and policies related to the use of the shared space. These guidelines may address issues such as sanitation, proper use of features and expectations for keeping the space in good condition.

Emergency repairs:

Agreements often detail procedures for handling emergency repairs and unexpected maintenance issues. For example, broken parts that pose a threat to users. This ensures a swift response to urgent maintenance needs, minimising potential damage and disruptions to shared activities.

Source: Prepared by Children & Nature Network

d. Establish a volunteer programme

Let the community roll up their sleeves and dig in! Volunteers can help with tasks like weeding, planting, mulching and repairing natural play features, ensuring the space remains safe and inviting. Consistent

involvement from neighbours or community organisations also fosters a sense of ownership and pride among the school community, encouraging care and stewardship of the space. Additionally,

volunteer programmes provide opportunities for environmental education and community building, reinforcing the value of green schoolyards as shared community assets.

e. Incorporate maintenance into the school curriculum

Engage students in the maintenance of school greenspaces and let them gain valuable learning opportunities! Establish a student green committee or environmental club dedicated to the care of school gardens and greenspaces to create a more structured approach for upkeep. After-school programming can further support activities such as planting, weeding and monitoring plant health, allowing students to develop practical skills and deepen their connection to nature.

9. Monitor and evaluate

Transforming schoolyards into a thriving greenspace is exciting—but how do we know that it's truly making a difference? There are numerous evaluation tools and frameworks that can help teams capture their impact across key areas like health, learning and community engagement. By using established frameworks as a starting point, schools and partners can assess improvements in student well-being, academic outcomes and neighbourhood connections in a structured way. These tools help tell a compelling story about the benefits of green schoolyards, making it easier to secure funding and long-term support. Partnering with universities can bring valuable research expertise, ensuring data collection is rigorous and meaningful. Collaborating with researchers can also open doors to new insights,

strengthening the case for green schoolyards as essential community assets.

a. Collect data across dimensions before and after transformations

Baseline data helps establish a clear picture of existing conditions—whether it's student activity levels, air quality, shade coverage or community use—while post-transformation data reveals the positive changes that result. This before-and-after data can help refine best practices by identifying which design elements and programming strategies are most effective. It can also serve in future advocacy efforts and funding requests.



Figure 23. Schoolyard transformation in Chicago, Illinois, USA led by the Space to Grow initiative Image Credit: Space to Grow

For example, in 2021 a research project delved into the Space to Grow initiative in the city of Chicago, Illinois, USA. The Space to Grow initiative was designed to address health inequities by transforming concrete schoolyards in low-income communities into greenspaces for all community members to use. A research team used an evaluation protocol

designed to assess the five dimensions of the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance) that assesses the comprehensive public health impact of green schoolyards on children and their communities and the transferability of the various elements of the initiative.

Research methods were used to evaluate the impact of Space to Grow's green schoolyard transformations at the individual, school, and community levels across all five RE-AIM dimensions (Gerstein, D. E. et al., 2021).

Reach looks at who is benefiting from the programme—specifically, the kids and communities involved.

Effectiveness checks if the programme is making a difference, like improving students' health, learning, school environment and community connections.

Adoption tracks how often the schoolyard is actually being used, both during and outside of school hours.

Implementation sees how closely the programme is being carried out as planned across different schools.

Maintenance looks at whether the benefits last over time and if the schoolyard stays in good shape long-term.

Information for all five areas was obtained from publicly-available city and school records, as well as surveys and interviews with school and neighbourhood personnel. Outcomes provided evidence-based support for growth of Strength to Grow in the Chicago area and for investment in other green schoolyards initiatives.

10. Transfer the skills and knowledge

Sharing lessons learned is a powerful way to scale green schoolyard efforts across regions, ensuring that new projects build on past successes. By openly discussing what worked, what didn't, and why, communities can avoid common pitfalls and fast-track their progress. Whether through workshops, case studies, peer learning networks or community gatherings, spreading this knowledge helps create a collective roadmap for success. It also fosters collaboration, strengthens local advocacy efforts and inspires more schools to act. The more we share,

the faster we can transform schoolyards into thriving greenspaces for all!

a. Establish or join an existing learning exchange network in your community

Learning networks bring together like-minded individuals who are passionate about similar goals, such as creating nature-rich experiences for children. These networks create space to share best practices, troubleshoot challenges and learn from others who are on similar journeys.



Figure 24. Salzburg Global Seminar fellows participating in the Greening school grounds & outdoor learning programme. Image Credit: Salzburg Global Seminar

b. Help grow the green school grounds movement globally

World-changing movements often start small, on a single block, in one school or with a handful of neighbours who believe in making something better. They grow by inviting others into a shared vision and showing what's possible when we work together. If we want children to grow up in a healthier, more hopeful world, nearby nature can help lead the way. Let's start where we are, with what we have, and

trust that the seeds we plant today will grow into something much bigger tomorrow.

International School Grounds Alliance

International School Grounds Alliance (ISGA) is a global network of organisations working to enrich children's learning and play through improving the way school grounds are designed, managed, resourced and used. The well-being of children and the ecological diversity of their learning landscapes

are intrinsically linked and the ISGA aims to support all schools, wherever they are located and whatever the age of children in them, in making the most of the opportunities afforded by excellent school grounds.

The Greening Education Partnership (GEP)

The Greening Education Partnership led by UNESCO is a global initiative that takes a whole-of-system approach to support countries in tackling the climate crisis by harnessing the critical role of education. As a collaborative platform for governments and other stakeholders including inter-governmental organisations, civil society, youth, academia and private sector, Greening Education Partnership aims to deliver strong, coordinated and comprehensive action that will prepare every learner to acquire the knowledge, skills, values, and attitudes to tackle climate change and to promote sustainable development.

Salzburg Global Seminar Centre on Education Transformation

The Salzburg Global Centre for Education Transformation supports a wide range of activities designed to help develop new approaches to critical and emerging issues in education.

Greening school grounds resources

Table 6: Resources available online

Budget Category	Associated Steps in Guide	Title of Resource	Link
City of Paris, France & partners	Co-Design Construct & Celebrate/ Transfer the Skills	Recommendations Booklet for Transforming Schoolyards	https://www.childrenandnature.org/wp-content/uploads/Recommendations-booklet-OASIS.pdf
IVN Natuureducatie	Co-Design Construct & Celebrate	Green Blue Schoolyards Virtual Tour	https://www.greenblueschoolyardtour.org/
Instituto Alana	Activate for Learning & Play	Guide to Outdoor Learning	https://criancaenatureza.org.br/wp-content/uploads/2021/06/Aprender-ar-livre-ingles.pdf
Jundiaí City Hall - Education Management Unit	Identify Policies	Unwalling School: The quality of education in the context of the Innovative School Programme	https://drive.google.com/file/d/1dR4n6b4l73LsOVSI-BHQ5UvwsvdNCiOX/view
Instituto Alana	Advocate / Activate for Learning & Play	Unwalling Childhood: Schools as a place to encounter nature	https://criancaenatureza.org.br/wp-content/uploads/2018/12/Unwalling_Childhood.pdf
Instituto Alana	Transfer the Skills	Nature Playscapes: The Brazilian experience	https://criancaenatureza.org.br/wp-content/uploads/2022/06/English-factsheet-Natural-Playspaces.pdf
Instituto Alana	All	Parques Naturalizados: Paisagens Para o Brincar (English subtitles)	https://www.youtube.com/watch?v=8ZU3BI36rDI&t=3s

Instituto Alana	All	Paths for implementing natural play spaces — A guide for public managers	https://ugc.production.linktr.ee/a92f425b-10fa-4bce-8532-d23404636a5f_Paths-naturalplayspaces.pdf
Instituto Alana	Co-Design Construct & Celebrate	Guide on Natural Play Structures and Furniture	https://ugc.production.linktr.ee/e1f7d321-d66f-40bc-9cff-19b862c24947_Structures-naturalplayspaces.pdf
Asociación para la Niñez y su Ambiente (ANIA)	Activate for Learning & Play	Guide to Children's Land Methodology Metodología TiNi (Available in Spanish & English)	https://drive.google.com/file/d/1trV_cM8EpeBpa1wrJDhsH-ZXUgpMNOxOo/view
Children & Nature Network	Advocate	The Benefits of Green Schoolyards Infographic	https://eadn-wc04-796033.nxedge.io/wp-content/uploads/CNN20_benefits-wheel_20-9-13.pdf
Environmental Law Institute and Amigos Bravos	Co-Design Construct & Celebrate	Step-by-Step Guide to Integrating Community Input into Green Infrastructure Projects	https://www.eli.org/sites/default/files/eli-pubs/step-step-guide-integrating-community-input-green-infrastructure-projects.pdf
Routledge/ University of California Berkeley	Activate for Learning & Play	Place-Based Scientific Inquiry A Practical Handbook for Teaching Outside	https://doi.org/10.4324/9781003367192
Evergreen	Activate for Learning & Play	A Community Guide to Nature Play	https://evergreen.ca/resource-hub/wp-content/uploads/2024/09/communityguide-natureplay.pdf

Learning Through Landscapes	Activate for Learning & Play	Outdoor learning ideas	https://ltl.org.uk/free-resources/
UNESCO	Activate for Learning & Play	Design for outdoor learning	https://unesdoc.unesco.org/ark:/48223/pf0000081964.locale=en
N. van den Bogerd, J. Maas	Monitor & Evaluate	Development and testing of the green schoolyards evaluation tool	https://doi.org/10.1016/j.landurbplan.2023.104921
Urbio and Örebro municipality	Co-Design Construct & Celebrate!	Lekotoper: A guide for nature lovers green playgrounds	https://acrobat.adobe.com/id/urn:aaid:sc:US:652f3c0b-a6a1-4571-b7c4-d24e4b94a022?viewer%21megaVerb=group-discover
Evergreen	Co-Design Construct & Celebrate!	Climate Ready Schools. Irma Coulson Public School Pilot Project Case Study	https://www.evergreen.ca/wp-content/uploads/2023/10/Climate_Ready_Schools_Case_Study_2023.pdf
Green Schoolyards America	Activate for Learning & Play	Experiential Outdoor Learning in the Schoolyard	https://static1.squarespace.com/static/57682b81725e25259d8396e3/t/5dede6c4c2fab6555b2e5676/1575872206622/19-12-08_OutdoorLearning-SusanHumphries-GSA-m.pdf

Source: Prepared by Children & Nature Network

References:

- Berg, M. (2021, April 8). *In the flow: Loose Parts Play*. The Field. Retrieved July 3, 2025 from <https://thefield.asla.org/2021/04/08/in-the-flow-loose-parts-play/>
- Beckhard, R. (1972). Optimizing team building efforts. *Journal of Contemporary Business*, 1(3), 23–32. <https://doi.org/10.2307/3349351>
- Boulton, P., & Thomas, A. (2022). How does play in the outdoors afford opportunities for schema development in young children? *International Journal of Play*, 11(2), 184-201.
- Chawla, L., (2015). Benefits of nature contact for children. *Journal of Planning Literature*, 30(4), 433-452. <https://doi.org/10.1177/0885412215595441>
- Chawla, L., Keena, K., Pevec, I., & Stanley, E. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health & Place*, 28 (1-13). <http://dx.doi.org/10.1177/0885412215595441>
- Children & Nature Network. (n.d.). *The Benefits of Nature*. Children & Nature Network. Retrieved July 3, 2025 from <https://www.childrenandnature.org/the-benefits-of-nature/>
- International Union for Conservation of Nature (IUCN), Members' Assembly. (2012). *Child's right to connect with nature and to a healthy environment*. WCC 2012 Res 101. https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2012_RES_101_EN.pdf
- C40 Cities. (2024). *Design Guidance for Green & Thriving Public Spaces*. C40 Cities. https://www.c40knowledgehub.org/s/article/Design-guidance-for-public-spaces?language=en_US
- International Union for Conservation of Nature (IUCN) UNFCCC COP 28 Technical Brief (2023). *Nature-based Education for Planetary Health*. <https://www.iucn.org/resources/information-brief/nature-based-education-planetary-health>
- International School Grounds Alliance. (2025). *Climate Change & School Grounds*. <https://www.internationalschoolgrounds.org/general-6>
- International School Grounds Alliance. (2017). *Risk in Play & Learning*. International School Grounds Alliance. Retrieved July 3, 2025 from <https://www.internationalschoolgrounds.org/risk-declaration>
- Kuo, M., Barnes, M., & Jordan, C. (2019). Do Experiences With Nature Promote Learning? Converging Evidence of a Cause-and-Effect Relationship. *Frontiers in Psychology*, 10(305). <https://doi.org/10.3389/fpsyg.2019.00305>
- Loebach, J., Ramsden, R., Cox, A., Joyce, K., & Brussoni, M. (2023). Running the risk: The social, behavioral and environmental associations with positive risk in children's play activities in outdoor playspaces. *Journal of Outdoor and Environmental Education*, 26, 307-339. <https://doi.org/10.1007/s42322-023-00145-1>

Louv, R. (2023, March 15). *Greening democracy: The transformative power of nature on children and society*. The MIT Press Reader. <https://thereader.mitpress.mit.edu/the-transformative-power-of-nature-on-children-and-society>

Gerstein, D. E., Bates, C. R., & Bohnert, A. M. (2021). Evaluating a green schoolyard transformation: A protocol utilizing the RE-AIM framework. *Children, Youth and Environments*, 31(1), 187-198.

Nicholson, S. (1971). How NOT to cheat children – The theory of loose parts. *Landscape Architecture*, 62, 30-34. <https://usergeneratededucation.wordpress.com/wp-content/uploads/2016/02/1204-5117-1-pb.pdf>

#NatureForAll and Children & Nature Network. (2018). *Connecting with Nature to Care for Ourselves and the Earth: Recommendations for Decision-Makers*. #NatureForAll and Children & Nature Network. <https://natureforall.global/wp-content/uploads/2020/12/ConnectingwithNature.pdf>

Sobel, D. (2008). *Childhood and nature: Design principles for educators*. Stenhouse Publishers.

Outdoor Play Canada. (2015). *Position Statement on Active Outdoor Play*. Outdoor Play Canada. <https://www.outdoorplaycanada.ca/resources/position-statement-on-active-outdoor-play/>

Titman, W. (1994). *Special places; special people: The hidden curriculum of school grounds*. World Wide Fund for Nature. <https://files.eric.ed.gov/fulltext/ED430384.pdf>

United Nations. (n.d.). *The 17 goals. United Nations Sustainable Development Goals*. United Nations. Retrieved July 3, 2025. <https://sdgs.un.org/goals>



INTERNATIONAL UNION
FOR CONSERVATION OF NATURE

WORLD HEADQUARTERS
Rue Mauverney 28
1196 Gland, Switzerland
mail@iucn.org
Tel +41 22 999 0000
Fax +41 22 999 0002
www.iucn.org

