

LIVING SCHOOLYARDS FOR SEATTLE PUBLIC SCHOOLS
Strategies for Implementing and Sustaining Living Public Schoolyards

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Abstract

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Strategies for Implementing and Sustaining Living Public Schoolyards

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This thesis examines Seattle Public Schools processes that promote and/or inhibit the implementation of dynamic living schoolyards in elementary schools, and proposes phased strategies to achieve more equitable and efficient green schoolyard implementation district-wide. Schoolyards are impactful teaching landscapes, and schoolyard design directly impacts student learning. Living schoolyards (schoolyards that feature natural areas of vegetation, offer open-ended “loose parts” play, and landscape linked curricula) provide important benefits for student health and wellbeing. Despite a large body of evidence indicating that green schoolyards support children’s learning, Seattle Public Schools elementary school campuses rarely incorporate these features into their schoolyards. Implementing green schoolyards in public schools offers one means of addressing environmental justice, equitable school resource distribution, improved student physical and psychological health, and long-term climate change resilience.



Figure 1.0: An imagined living schoolyard at View Ridge Elementary in Seattle, Washington. Illustration by author.

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CHAPTER 1

INTRODUCTION

How might Seattle Public Schools (SPS) and landscape architects support the implementation of equitable and sustainable living schoolyard landscapes?



Figure 1.1: Typical schoolyard features and program. Illustration by author.

Typical public schoolyards are restrictive by design. In the United States, regardless of city or region, typical schoolyards share key features: extensive asphalt surfacing, fixed play equipment, and few trees (Danks 2010). These features subconsciously shape use, promoting hard-surface games and directed play using playground equipment. Like many people, I have personal experience with asphalt schoolyards. I often walk my seven-year-old nephew to school at View Ridge Elementary, the same school I attended as a child. The schoolyard is nearly identical, 25 years later. My memories of recess are of running on hot asphalt, sometimes attempting to plant dandelion seeds in the cracked surfaces. As a nature-loving and quiet kid, it was hard to feel truly comfortable on our crowded playground. Despite evidence that asphalt-dominant schoolyards do not adequately serve students’ needs, many public schools continue to maintain impervious, low-engagement landscapes (Danks 2010).

Living schoolyards, defined as environments that engage students in diverse play opportunities while improving environmental function (OUSD 2022), benefit students’ physical health and quality of learning (Raney 2021).

Typical public elementary school grounds do not create these benefits. This is an urgent problem, especially for children who are most impacted by the harmful effects of structural racism and climate change.

Seattle, like many cities, is shaped by exclusionary urban planning policies and significant wealth disparities (Bramble 2023). Neighborhoods home to communities of color endure higher levels of air pollution, temperatures, and lower levels of mature canopy cover (Bramble 2023). These stressors result in lower public health outcomes for affected communities, requiring urgent action to improve these conditions (D’Aquila 2022). Living schoolyards can improve well-being for both students and the greater community (Raney 2021, Wolf 2024). The process of designing and stewarding living schoolyards in public schools can further support students’ emotional and physical wellbeing. Research shows that student participation in the design of their school grounds also leads to significant emotional and learning benefits (Wolf 2024). Students furthest from educational justice must have regular access to landscapes that reflect their cultures and needs at school, and they must have the opportunity to engage with the design process.



Figure 1.2: Children play in a bioswale in a Milwaukee Green and Healthy School. Source: Milwaukee Metropolitan Sewerage District

This thesis serves as a guide for school district employees, landscape architects, and community members to work together toward implementing living schoolyards at institutional and grassroots levels simultaneously. This guide includes living schoolyard construction guidelines, which list social, environmental, and organizational features of high-quality schoolyards. These specifications respond to common barriers to living schoolyard implementation, which include shifting school district priorities, limited funds, and rigid curriculum that deprioritizes experiential, place-based learning.

This thesis is a step toward building institutional knowledge of living schoolyard implementation and stewardship practices, which have the potential to advance environmental justice and community health for Washington’s most vulnerable students. A proof-of-concept study in Seattle can provide impetus to shift city and state processes, developing paths to support sustained funding and curriculum development at a state level to ultimately reach students across the state of Washington.

In this thesis, I will demonstrate the benefits of living schoolyards for student learning, health, and wellbeing. A precedent analysis of local, national, and international green schoolyards illustrates diverse processes of implementing and sustaining high-quality schoolyards.

These precedents inform the development of elementary (K-5) living schoolyard construction guidelines that respond to the existing context of SPS. These guidelines include social, environmental, and organizational features as necessary elements of high-quality schoolyards.

Public schoolyards in Seattle are overwhelmingly paved and focused on organized sports despite evidence that nature play, creative play, and a strong sense of place in schoolyards improve student wellbeing and environmental health. Through analysis of existing public schoolyard design processes and precedent study, this thesis provides strategies for the design and implementation of equitable living schoolyards that respond to the current budgetary and organizational constraints of Seattle’s public elementary schools while prioritizing students’ right to high quality outdoor learning environments.

RESEARCH QUESTIONS

Living Schoolyard Benefits and Implementation Processes

What psychological, physiological, and environmental benefits do living schoolyards provide?

What features of living schoolyards support public health and educational quality, and how are those features implemented and sustained?

Seattle Public Schools (SPS) Existing Processes and Motivations

What are existing SPS policies, procedures, stakeholders, and motivations for schoolyard quality improvement?

How might SPS better support the design, implementation, and sustained maintenance of living schoolyard landscapes in elementary schools?

Application of Living Schoolyard Strategies: Speculative Design

What are potential processes and designed features for short-term and long-term phased implementation of living schoolyard features on an existing SPS site?

DESIGN VALUES

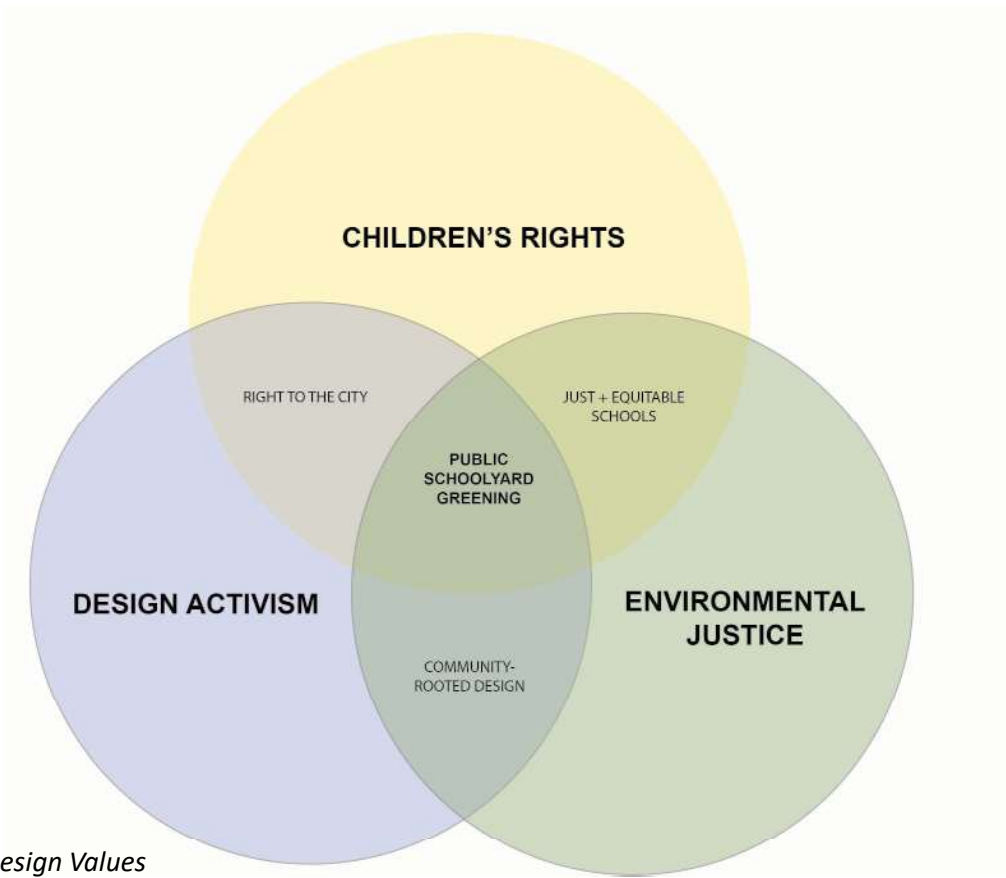


Figure 1.3.: Design Values

Introduction

Landscape architecture is a political field. As designers of the built environment, landscape architects must actively engage with matters of justice in society. Like landscapes themselves, we hold layered histories. Designers are powerful: with our work, we can support the creation of a more just and equitable built environment, or we can reproduce the harmful systems of the status quo (de la Peña 2017). Figure 1.3 illustrates the confluence of design values that are foundational to working toward just public schoolyard landscapes. In this thesis, I approach the implementation of schoolyard greening through the lenses of fundamental children’s rights, design activism, right to the city, and environmental justice.

Children’s Rights

The 1989 United Nations Convention on the Rights of the Child is a human rights treaty recognizing the fundamental rights of children. It is the most-ratified treaty in the world: with the glaring exemption of the United States, every United Nations member country has ratified the agreement. (UNICEF. “UN Convention on the Rights of the Child (UNCRC).”) The protection of children’s rights should be prioritized in all matters relating to children, regardless of national

legal recognition. Children must be respected as people, their best interests must be considered, and they have the right to quality health care, education, and play. The built environment must respond to these rights with urgency, especially in the United States, where basic human rights are not prioritized by the government (“The Incredible Opportunity of Community Schoolyards” 2021). Within landscape architecture, the rights of the child should inform community outreach, site research, participatory design practices, and overall design.

Design Activism

Designers can fight for justice by practicing transactive design. Transactive design is the process of collective knowledge exchange between community members, designers, and those in power (de la Peña 2017). This framework centers relationality, learning, and communication as fundamental to design. In the 2017 book *Design as Democracy*, the authors write that the goal of transactive design is to transform. This transformation may be individual, social, and physical. SPS is a large, complex organization. Approaching this research through a lens of design activism centers the knowledge of students and communities of SPS, resisting the rote acceptance of the existing bureaucracy as a static force.

Right to the city

Public schoolyards are public sites. School communities are a public, and Lefebvre’s *Right to the City* argues that the public has the right to life within urban spaces. The right to the city complicates my decision to work within the scope of policy for this thesis. Policy alone can only be a part of a truly transformative change in public school environments. Lefebvre writes, “The right to the city manifests itself as a superior form of rights: right to freedom, to individualization in socialization, to habitat and to inhabit. The right to the oeuvre, to participation and appropriation (clearly distinct from the right to property), are implied in the right to the city.” (Lefebvre 1968). Schoolyard design, then, must involve the diversity of opinions and cultures held by the students and communities they serve.

Environmental Justice

The Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (American Public Health Association).

These values provide the basis of my approach to this research, which upholds the right for children to receive high quality education in an environment that protects their health, cultures, and agency as people. For future generations, I hope for the transformation of public educational institutions to become sources of liberatory education, indigeneity, and participatory design.

Conclusion

Analyzing typical public schoolyard design through the lenses of children’s rights, design activism, right to the city, and environmental justice reveals opportunities for transformative shifts in the ways designers approach children’s school environments. Children have the right to participate in the design of the form and functions of their spaces, both as inherent rights of the child and as a public. As practitioners of transactive design, designers have a responsibility to contribute to transformative change through support of children’s rights to safe, healthy, enriching environments.

METHODS

Through literature review, policy analysis, and expert interviews, this thesis analyzes existing SPS policies, procedures, stakeholders, and motivations for schoolyard greening. Further literature review provides context for living schoolyard features, benefits, and implementation processes. Case studies illustrate precedents of sustainable municipal-scale living schoolyard implementation processes. From this analysis, I identify specific challenges and opportunities relating to SPS schoolyard design. Incorporating both case studies and analysis of SPS existing processes, I propose phased strategies for implementing sustainable and equitable living schoolyards in Seattle. A speculative multi-phase design of View Ridge Elementary School demonstrates possible outcomes of applied living schoolyard implementation strategies.

INTERVIEWS

Throughout the winter and early spring of 2026, I conducted a total of seven interviews with landscape architects and SPS district employees. Figure 1.3 illustrates interviewee names, titles, and photographs. Each interview was approximately 45 minutes. Conversations were semi-structured and informal. Topics discussed included existing SPS design processes, landscape maintenance and implementation processes, and SPS case study site details. These conversations informed my overall research questions, case study selection, continuing literature review, and design goals for speculative SPS schoolyard design. Interviewees are SPS employees and practicing landscape architects with direct experience designing SPS schoolyards.

INTERVIEWEES



Colleen Weinstein
VEP Program Manager
Seattle Public Schools



Conrad Plyler
Capital Projects
Seattle Public Schools



Michelle Biggs
Facilities
Seattle Public Schools



Ian Brown
Resource Conservation
Seattle Public Schools



Nicolas Morin
Landscape Architect



Gar-Yun Ho
Landscape Architect



Eric Higbee
Landscape Architect

Figure 1.4.: Interviewee photographs

RESEARCH METHODS DIAGRAM

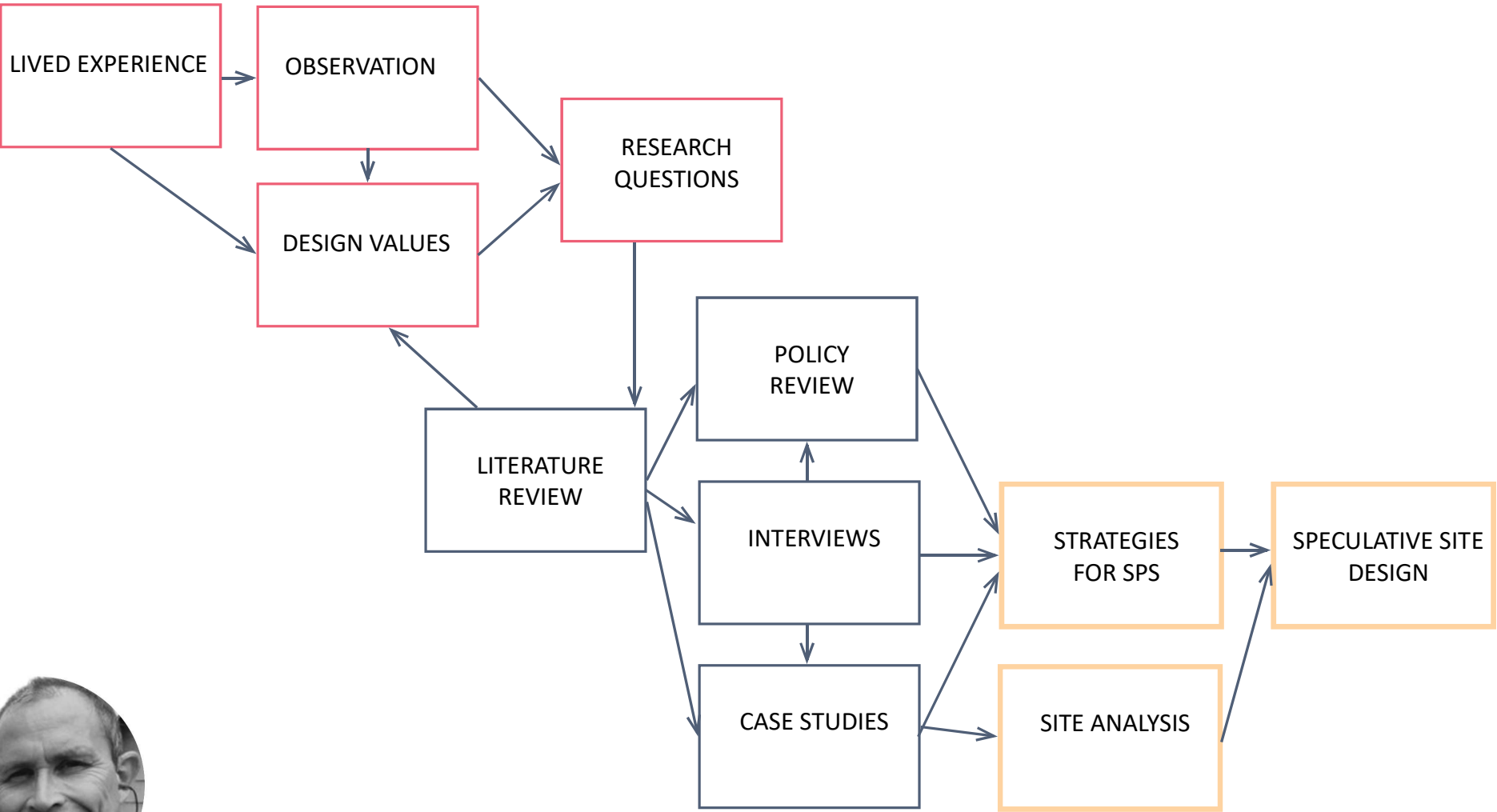


Figure 1.5.: Research Methods



Figure 2.0.: View Ridge Elementary entrance from 50th Ave NE (Seattle Public Schools)

CHAPTER 2

TYPICAL SCHOOLYARDS

*How did paved schoolyards become the norm in public schools?
Why are schoolyards important?*



Fig. 2.1: Typical schoolyard example: View Ridge Elementary grades K-2 playground is heavily paved and exposed to weather conditions. This playground's features do not include vegetation or topographic change.

Introduction

Why schoolyards? Children have very little control over their environment, but spend significant amounts of time in their schoolyards. Schoolyards are rare places where children are able to pass time without the direct instruction of an adult. Schoolyards offer opportunities for community building, placemaking, environmental stewardship, and culturally relevant landscapes. However, typical schoolyard design results in heavily paved, low play diversity spaces with little vegetation (Fig. 2.1). The potential benefits of living schoolyards are available only when institutional values, landscape design, and community capacity align.

Schools Reflect Cultural Values

Schoolyard design reveals the ways society views children. Since the mid 1800's, the environments designated for children's learning have evolved in form and intention (Fig. 2.2). The modern school systems of the United States (U.S.) are a product of industrialization, capitalism, nationalism, and democratic ideals. The carceral forms of public educational institutions reflect these societal values, despite the progression of educational theory toward abolitionist, liberatory frames.

Schools in the United States are rooted in institutional structures that reproduce capitalist and nationalistic values. Additionally, as Wayne Au notes in his book "A Marxist Education", it is well documented that our system of schooling "produces and reproduces inequalities largely based on race and class" (Au 2018). Meritocracy and individual determination shape the frameworks of U.S. public school systems (Au 2018), but examining those systems through a marxist lens reveals opportunities to resist capitalist reduction of youth to their test scores and performance metrics (Au 2018). Resistance comes in the form of teachers, students, and communities who foster relationality, culturally relevant and responsive teaching, and liberatory pedagogical frameworks in the classroom. This systemic issue extends to the design of schoolyards, which communicate implicit messages about children's abilities and inherent worth.

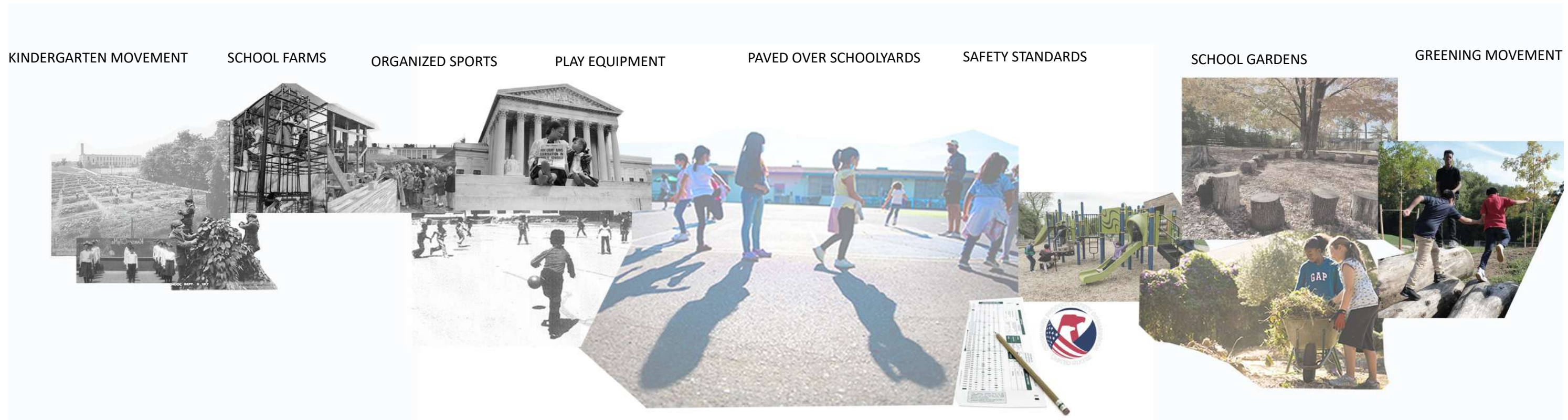


Fig. 2.2: Schoolyard forms and functions through time, 1800s-2026.

Kindergarten Movement and School Farms

The modern approach to school-based play is rooted in the Kindergarten movement, popularized by Freidrich Froebel in 19th century Germany. He argued that play and learning are intertwined, and that children develop their identities through play and exploration (Herrington 2004). The Kindergarten movement idealized garden culture, holding reverence for natural phenomena.

The playground movement followed in the mid-19th century, promoting a theory of early childhood that was defined by play, innocence, and learning, distinct from adulthood (Kuh 2014). This separation of childhood development led to the development of specific spaces for young children to play. In the 1880's, North American cities were inspired by the German sand garden movement and implemented "sand gardens", or large piles of sand, for the purposes of young children's creative play. Some play leaders in the 19th c. advocated for children's free choice in play. The Kindergarten movement inspired a requirement for designated outdoor places for young children at school, a new concept within formal classroom education (Kuh 2014).

Urbanization and School Farms

In North America, increasing urbanism drove calls for children to access play areas within crowded cities. The values that resulted in nature-filled, child-directed creative outdoor play transformed to fulfill urban site requirements, which resulted in fewer opportunities for creative play and loose parts play. Early 20th century school play yards were largely bare lots surrounded by fencing. Play leaders facilitated children's activities, providing direct curricular connection to children's time outdoors. However, the cultural emphasis on the value of play was lost as industrialization shaped the design of children's educations and environments.

School gardens were adopted by North American schools in the late 1800's as a response to rapid urbanization and movement of students from rural communities to urban centers. This development changed the form of nature-school connection. These gardens were composed of flower boxes and raised garden beds on school grounds (Herrington 2004). Overall, these gardens were vocational and production focused, distinct from the Kindergarten movement's emphasis on spirituality in nature. There was a focus on "skill development, civic pride, and economic output" (Herrington 2004). The production school garden model was phased out by 1930's

because production was difficult to scale up and teachers resented requirements to manage large scale gardening operations (Herrington 2004).

Physical Fitness

As the 20th century began, industrialization rapidly shaped educational theory and educational spaces. Curricula placed emphasis on children as future laborers, preparing them to be 'socially efficient citizens' (Kuh 2014). Physical fitness emerged as a key priority for schools. Rather than the leisure-focused playspaces of the 1800's, these schoolyards were sites for group calisthenics and military drills. The design of these spaces is recognizable today - rectilinear schoolyards, high fences, and dirt lots allowed for large groups to practice drills together.

Rapid urbanization and industrialization led to public health concerns. Forest schools were seen as an antidote to children suffering from respiratory illnesses due to pollution from the industrialized environments of rapidly growing cities. Impromptu classes were held in parks and locally accessible forests (Herrington 2004). By the 1930s, forest schools were phased out in favor of more organized and contained schoolyards. As outdoor recreation and organized sports became culturally favored ways to spend time outdoors, schools mirrored

those cultural values. Urban schoolyards accommodated organized sports movements, which required large fields and gravel yards for recreational team sports.

The 1950s marked another shift in attitudes toward children. Rather than enact regimented military drills or dig in sand gardens, children were encouraged to direct their play through the use of play structures. Asphalt surfaces and metal play equipment became common in schoolyards (Herrington 2004). These materials required little maintenance and created the impression of sanitary, orderly conditions. Almost immediately, the public critiqued the asphalt yards. In the 1960's and 70's, schoolyard greening movements gained popularity in the United States. Robin Moore's book *Natural Learning* documents his work with a Berkeley, California school to create natural spaces from their asphalt schoolyard. His work with students demonstrated the educational potential of natural schoolyards, especially when children are co-designers of the space (Moore 1997).

Support for Creative Play

Adventure playgrounds emerged as an alternative to scripted play structures and asphalt yards. Invented in Denmark in the 1940's and popularized throughout the United States in the following decades, these playgrounds facilitated unscripted, creative play (Moore



Fig. 2.2: School garden plots at DeWitt Clinton Park, New York City, 1902. (Smithsonian)



Fig. 2.3: Children do calisthenics in their schoolyard at Lake Forest Park School, 1922. (Shoreline Historical Society)



Fig. 2.4 : An aerial view of SPS View Ridge Elementary School in 1947. Paved playgrounds were included in the initial schoolyard design and are visible in this photograph. (Seattle Public Schools)

1997). Loose parts, exploration, and “play-worker” facilitators were key elements of these spaces (Almon 2018). Children demonstrated motivation to learn, experiment, and take calculated risks while playing in adventure playgrounds. Adventure playgrounds proved that children have the aptitude for design and great interest in explorative play, returning to the foundational values of the Kindergarten movement.

In the 1980’s and 1990’s, some schoolyards introduced more diverse landscape features within their play yards. Paths, vegetation, and small gathering areas were introduced within public school settings (Moore 1997). The schoolyard greening movement initiated in the 1970s gathered momentum, leading to growing support for school gardens, nature areas, and places that could “encourage open-ended connection with nature and their peers” (Kuh 2014). However, the schoolyard greening movement was not fully embraced by public school systems or municipalities. Nonprofit organizations and advocacy groups led research, pilot projects, and supplemental schoolyard greening projects, but the lack of long term funding and natural play-supportive policies led to piecemeal projects. Unfortunately, these movements are the exception to the norm, and asphalt yards remain common at public schools throughout the United States (UCLA Waterkeepers 2024).

Systemic Stressors

Children growing up in the 21st century in the U.S. face enormous individual and societal stressors. In addition to the typical challenges of childhood development, today’s children also contend with the harmful consequences of structural racism, climate change, wealth inequality, and the social changes caused by unregulated technological advances. These stressors negatively impact children’s lives and in some cases prevent them from accessing healthy, safe environments and quality education (Cohn 2025).

Underfunded public schools face increasingly difficult challenges that reinforce the typical restriction of asphalt-dominant schoolyards. Prohibitively expensive U.S. healthcare costs make standard childhood injuries potentially financially disastrous, and litigation-averse school districts create restrictive, risk-averse environments to avoid costly injury lawsuits. Districts often pre-emptively remove play features that pose perceived risks, resulting in schoolyards that lack developmentally necessary play opportunities for swinging, climbing, jumping, and spinning (Frost 2012). Limited regulation of firearms results in chronic gun violence in schools, which reinforces high security and high-surveillance site design.



Fig. 2.5: Typical paved schoolyard environments amplify urban heat island effects and offer little shade.

Structural racism and capitalism are reproduced in the education system in the U.S. through colonizer-centered curricula, higher rates of punitive discipline directed toward Black and brown children, standardized test scores driving funding amounts, and lack of equitable educational environments across neighborhoods (Au 2018). Public schools are underfunded by the federal government. This creates a climate of perpetual budget stress at district levels, overburdened teachers, and schools with very limited capacity for change (Au 2018). Systemic underfunding results in high stress learning environments and limited capacity for recess supervision, which further limits students' abilities to assess risky versus potentially harmful actions while at play (Almon 2018).

The ongoing effects of climate change are visible in increasingly hot urban environments, severe precipitation events, and unpredictable seasonal shifts. Typical schoolyards exacerbate these stressful conditions through heat-magnifying surface materials and minimal vegetation. Asphalt or hardscape-dominant schoolyards contribute to the urban heat island effect, increasing the average air temperature and creating dangerously hot surface temperatures (Cohn 2025).

Conclusion

Schoolyard design reflects societal values. Today, typical schoolyard features demonstrate disregard for children's agency, learning, and health. However, schoolyards that are community-designed, provide opportunities for

creative play, and integrate ecological features support liberatory and just education. Schoolyards have not always been asphalt, and schools can resist the systemic forces that reinforce oppressive spaces.

Landscape architects, school district employees, and community members can support the transformation of typical schoolyards into dynamic ecological landscapes. The perception of children as creative, capable, and independent shaped the Kindergarten movement's embrace of nature in schoolyards. Adventure playgrounds demonstrated trust in children's abilities to learn risk assessment through experimentation rather than avoidance of all possible harm. The modern risk-averse principles of typical schoolyard design have created harm by omission. When schoolyards are poorly maintained and offer few choices for students, they implicitly communicate a "hidden curriculum" of lack of care for students' wellbeing. Research has shown that schoolyard quality directly relates to student perceptions of self-worth (Schulman et al 2007). These conditions are socially and physically stressful for children, resulting in disagreements, inactivity, and in some cases, unsafe environmental conditions. In response to student disagreements, some schools implement policies that increase teacher intervention during play, require students to spend recess inside, or reduce recess time altogether (Zhang 2022). I propose that these negative outcomes of typical schoolyard design can be countered by implementing thoughtful schoolyard greening in public schools.



Fig. 2.7: A typical asphalt schoolyard in Milwaukee. (Reflo)

TYPICAL SCHOOLYARDS REFLECTIONS

- The values of the Kindergarten movement, adventure playgrounds, and the schoolyard greening movement view children as capable and creative.
- Capitalist values led to militaristic schoolyards that emphasized physical fitness and directed organized sports play over creative environments.
- Typical public schoolyards are designed to support ease of supervision and reduce costs to school districts, not support children's health and wellbeing.
- Public schools in the U.S. are underfunded and have low capacity for change.



Fig. 3.0: An imagined living schoolyard at View Ridge Elementary.

CHAPTER 3

LIVING SCHOOLYARDS

*What is a living schoolyard?
What benefits can living schoolyards provide?*

living schoolyard:

“A rich outdoor environment that strengthens local ecological systems, provides hands-on learning resources, and fosters a wide range of play and social opportunities while enhancing health and well-being.”

(OUSD Living Schoolyards Guidelines 2022)



Fig. 3.1: OASIS schoolyard, Paris, France (CAUE 75).

WHAT IS A LIVING SCHOOLYARD?

Schoolyard greening is a process of schoolyard design or renovation that integrates natural features into recess areas and outdoor classrooms. In this thesis, I refer to these landscapes as living schoolyards. When thoughtfully designed, they are “rich outdoor environments that strengthen local ecological systems, provide hands-on learning resources, and foster a wide range of play and social opportunities while enhancing health and well-being” (OUSD Living Schoolyards Guidelines 2022). Community involvement, participatory design, and curricular connection are vital to the success of living schoolyards. These social factors differentiate living schoolyards from other greening projects, which may not incorporate community participation or learning landscape features. Living schoolyards increase play diversity and value by integrating varied microclimates and natural features into students’ everyday spaces. They are place-based and unique, reflecting the specific communities of the school and neighborhood. Living schoolyards are places of active stewardship and learning which support both curricular connection to outdoor learning and community participation and stewardship beyond school hours (Danks 2010).

Interconnected Systems:
Design, Implementation, and Stewardship

Living schoolyards differ from typical schoolyards in both their features and in the processes of design, implementation, and maintenance. Typical schoolyards are designed by district-contracted firms with limited community engagement. Those typical schoolyards are designed for least possible maintenance and liability, which often means majority-paved spaces and limited vegetation. Implementation of typical schoolyards is completed by contractors out of school hours, meaning that students have limited opportunities to witness ongoing construction processes. Once a typical schoolyard has been installed, the design is static: no changes will be made to the schoolyard until the next total renovation, likely decades later. Maintenance of typical schoolyards is not integrated with curriculum, so students have little access to maintenance or stewardship of their schoolyard. Living schoolyards are designed to change. The process of design is iterative and rooted in community. Designs are intentionally open-ended and phased, which supports children’s agency in design and facilitates ongoing community



Fig. 3.2: Play in a living schoolyard (illustration by author)

interest in the landscape. Implementation and construction processes include children in every possible way, and timelines are designed around children and curricular needs. Rather than restrictive, limited maintenance, living schoolyards integrate adaptive management practices, stewardship practices, and traditional maintenance practices (Moore 1997).

Community Participation

Although living schoolyards are unique and place-based by definition, successful schoolyard renovation projects share key elements. Meaningful community participation is an important part of living schoolyard design, implementation, and long-term maintenance. Community engagement processes include students in the site analysis and conceptual planning of their schoolyard. Iterative design processes support community alignment on goals and vision for their schoolyard, which supports community satisfaction and successful stewardship in the long-term. Stable funding sources, supportive governmental and organizational policies, and consistent leadership enable the years-

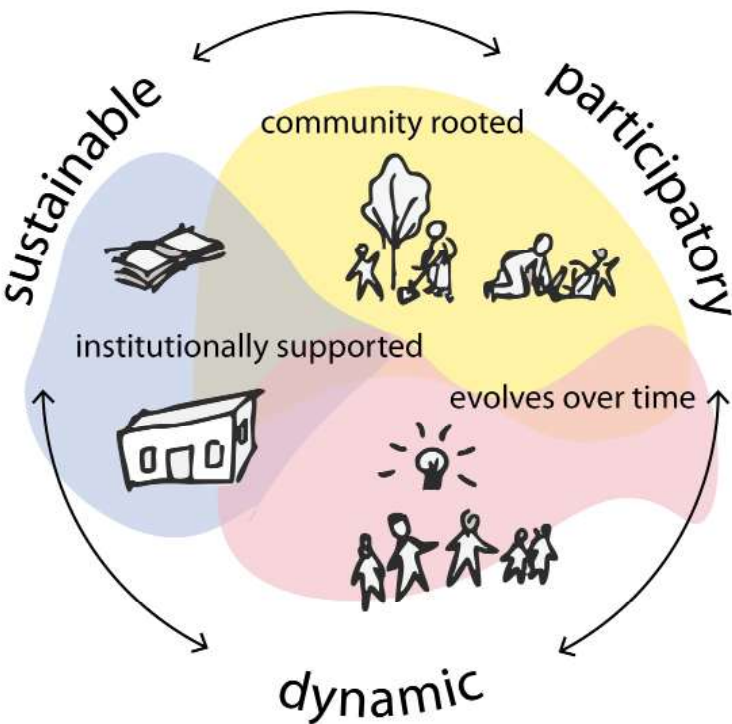


Fig. 3.3: Living schoolyard framework

long process of living schoolyard implementation to successfully transition from conceptual plan to landscape.

Phased implementation supports participation by community members far beyond the initial conceptual design cohort. The evolving form of living schoolyards must be considered in funding structures. Long term maintenance, stewardship, and iterative design are elements of the schoolyard, and should be considered as important features during design and planning processes (Sekulova 2024). Open-ended design blurs the line between planning processes and “completed” projects. This contrasts with the approach for typically designed schoolyards, which are static, highly controlled landscapes. Living schoolyards are intended to change over time (Danks 2010). The design and process of implementation encourages students to engage with natural processes and stewardship, which further supports community and student investment in the schoolyard. Participation by students and communities ensures that the schoolyard reflects community needs and can adapt along with the community over time.

Stable Partnerships and Aligned Values

The constraints of public school systems in the U.S. challenge the successful implementation and stewardship of living schoolyards. Pressures of results-oriented standardized testing, decreasing student enrollment, limited budgets, and leadership turnover demand immediate and short-term foci for school districts. This results in minimal organizational capacity for long term landscape stewardship. To succeed within the existing system of education in the United States, public living schoolyards must be long-term collaboration between school leaders, municipal organizations, community members, and other stakeholders (Sekulova 2024). Additionally, all involved must understand the educational value of natural elements. Sekulova writes,

“successful greening requires architects who are fond of natural materials and understand the educational objectives of the reform. According to the “Theory of Loose Parts”, for example, elements like branches, bushes, twigs, sand, mud and leaves are fundamental for creativity (Nicholson, 1972), providing children with the chance to design, re-design and give



Fig. 3.4: Children run through the courtyard-forest of the Jules Steeg School in Paris, France.

*“Overall, greening and diversifying schoolyards empowers girls not only to actively engage in play behaviour, but to take and occupy space from which they have been previously excluded.”
(Sekulova 2024)*

meaning to an assemblage themselves (van Dijk-Wesselius et al., 2022). Nonetheless, most naturalized schoolyards are not particularly rich in loose parts. Indeed, the aerial views undertaken in landscape architecture may sometimes clash with the ground level focus of children (Kreutz et al., 2018)” (Sekulova 2024).

Stewardship is a curricular element of living schoolyards, which have the potential to involve students in tasks such as planting, weeding, composting, and other tasks. However, schoolyard maintenance is often limited by budget, staff availability, and waning community interest over time (Plyler 2026). Typical maintenance tasks might not align with the schoolyard landscape educational goals: for example, a maintenance staff member might remove weeds and branches from a planting area. Maintenance staff education must include the specific aims of explorative learning and diverse “loose parts” play to maintain the learning environment of a living schoolyard. Community participation in the stewardship of living schoolyard landscapes is necessary. Stewardship yields both social and ecological benefits, but can be difficult to maintain without organizational infrastructure and long-term funding supporting it (Sekulova 2024).

Equity

Who gets to play? Equity must be a central consideration when planning, installing, and sustaining living schoolyards. When governance and policy do not intentionally prioritize racial and environmental justice in schoolyard design, living schoolyards fail to provide community and environmental benefits to their full potential (Sekulova 2024). Additionally, schoolyard greening may contribute to the displacement of historically oppressed communities through the process of “green gentrification” (Hagerman 2025). When funding for schoolyard greening and maintenance is provided by community members, research shows that the recipients of greening are overwhelmingly white and middle class (Sekulova 2024). Wealthier schools have more capacity to pay for maintenance, fund a garden teacher, and install more expensive infrastructure. Living schoolyards have the potential to become public health infrastructure and venues for liberatory education. To accomplish those goals, living schoolyard planning processes must center environmental and racial justice.

ELEMENTS OF LIVING SCHOOLYARD SYSTEMS

Successful living schoolyards are interconnected systems. Infrastructure, features, and processes align to create dynamic landscapes that support children’s health, learning, and community wellbeing. Living schoolyards must incorporate infrastructure support and processes that integrate participation and iteration into long-term planning. This figure (Fig. 3.5) illustrates the processes, features, and infrastructure of successful living schoolyards.

PROCESSES



Iteration
The strategies for design, implementation, and maintenance change as needed.



Participation
Students, community members, and district employees contribute to design



Stewardship
Students, community members, and district employees care for schoolyard landscape collaboratively



Curriculum
Schoolyard is part of daily learning, recreation, and stewardship. Students engage with schoolyard during class time.

FEATURES



Loose Parts
Creative play with available materials, often natural



Stormwater
Pervious surfaces support infiltration



Topography
Variations in experience and microclimates



Gathering Space
Areas for group activities, quiet retreat, and observation

INFRASTRUCTURE

leadership support

long term funding

supportive policy

FEATURES

diverse play

gathering space

topographical variation

shade and habitat

stormwater filtration

sense of place

loose parts play

INFRASTRUCTURE



Long Term Funding
Funds for initial installation, long term adaptive management, and ongoing design alterations are incorporated into expected budget.



Supportive Policy
District, city, state, and federal policies legalize, incentivize, and sustain living schoolyards



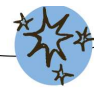
Leadership
District leaders, city leaders, and community members understand and support living schoolyard processes and features



Shade and Habitat
Trees and vegetation provide habitat connections, pollinator paths, and cooling shade.



Diverse Play
Creative, restful, and active play spaces are available for students



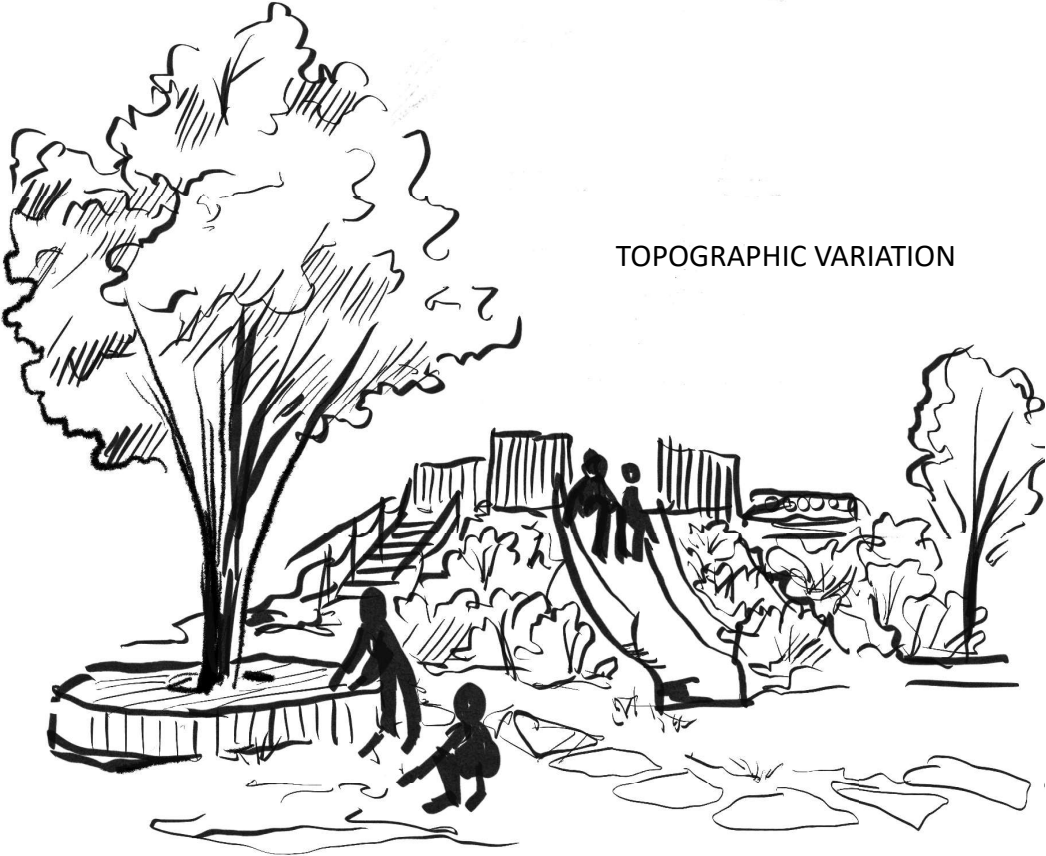
Sense of Place
The schoolyard is unique and reflects the identities of the school community and location.

Fig. 3.5: Elements of living schoolyard systems

DESIGN FEATURES OF LIVING SCHOOLYARDS

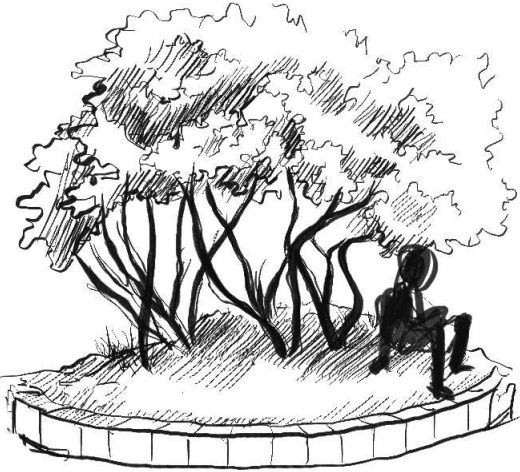
Although living schoolyards are unique and place-based by definition, they share key design features that support the integration of rich educational environments, ecosystem services, and urban green infrastructure. This figure (Fig. 3.6) illustrates a sample of the design features of living schoolyards. For a more exhaustive list of design features, see Appendix (page 136).

PLANTS FOR POLLINATORS, HABITAT, SHADE



TOPOGRAPHIC VARIATION

REFUGES



PEOPLE-PLANT INTERACTION



SITE FIXTURES ARE NATURAL MATERIALS



LOOSE PARTS PLAY AREAS



TRADITIONAL PLAY EQUIPMENT



SPORTS FIELDS

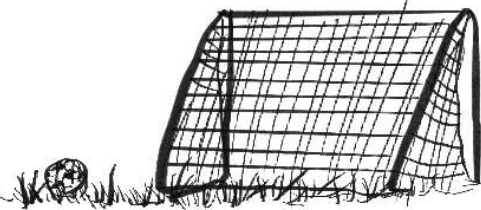


Fig. 3.6: Design features of living schoolyards

LIVING SCHOOLYARD BENEFITS

PHYSICAL BENEFITS



Physical Activity
Students increased intense and moderate physical activity by X% after living schoolyard installation (Raney 2021).



Air Quality
Trees and shrubs filter airborne pollutants, prevent wind-blown dust inhalation, and reduce noise pollution.



Cooling
Tree canopy provides shade and reduces air temperatures through evapotranspiration. Natural materials and permeable surfaces stay cool in warm weather (Stevenson 2021).



Community Greenspace
Equitable access to greenspace supports overall public health, reduces crime, and increases community cohesion (Stevenson 2021).

EMOTIONAL BENEFITS



Connection to Nature
Nature connection supports mental health, ecological consciousness, and emotional regulation (Sekulova 2024).



Sense of Place
Unique, place-based spaces support community connection, place attachment, and identity (Sekulova 2024).



Sense of Belonging
Participation in designing, building, and maintaining spaces supports overall sense of belonging and purpose. High-quality, diverse, and accessible site features contribute to childrens’ sense of worthiness (OUSD 2022).



Self-Esteem
Opportunities for leadership, cooperation, exploration, risk-taking, and experiential learning recognize multiple intelligences and support overall self-esteem (Sekulova 2024).



Cooperation
Creative play, nature exploration, design participation, and stewardship support increased cooperation between students (Sekulova 2024).



Community Cohesion
Community design, build, and stewardship processes support overall social cohesion. Accessible neighborhood greenspace further supports community cohesion, safety, and interpersonal connections (Sekulova 2024).

EDUCATIONAL BENEFITS



Experiential Learning
Curriculum that engages the schoolyard environment creates greater connection to place, increased student engagement, and academic achievement overall.



Focus
Increased time in nature, increased physical activity, and increased emotional regulation support focus throughout the school day (Sekulova 2024).



Risk Assessment
Natural features like rocks and logs, varied topography, and diverse vegetation support student development of risk assessment and embodied knowledge (Almon 2018).



Stewardship
The opportunity to deeply engage with all cycles of schoolyard caretaking (planting, watering, weeding, pruning, protecting) supports students’ behavior, self-esteem, and community cohesion. Stewardship practices reduce vandalism and crime in greenspaces (Sekulova 2024).

ENVIRONMENTAL BENEFITS



Biodiversity
Diverse trees, shrubs, and other vegetation increase biodiversity of plants, animals, and insects in urban environments.



Habitat
Tree canopy, vegetation, exposed soil, natural debris (leaves, twigs), and rocks provide habitat for animals and insects.



Pollinators
Increased habitat and biodiversity supports increased pollinator populations, which support healthy ecosystems and edible food production.



Stormwater Management
Green stormwater infrastructure slows and filters stormwater runoff. This process prevents pollutants from entering water bodies and reduces soil nutrient stripping and erosion.

ECONOMIC BENEFITS



Reduced Cooling Costs
Increased shade canopy surrounding school buildings reduces overall solar gain and saves cooling costs during warm weather.



Reduced Surface Water Fees
Stormwater management fees allocated by King County reflect overall impervious surfaces on site. Reduced paving and green stormwater infrastructure save school districts long-term costs.



Staff Retention
Greening supports school employees’ physical and emotional health. Living schoolyards can increase staff satisfaction and reduce turnover.

Fig. 3.7: Benefits of living schoolyards

DESIGN FEATURES AND BENEFITS

The features of living schoolyards are multifaceted, and benefits from different categories often stem from a single design or process feature. For example, the inclusion of topographic variation in a schoolyard leads to increased physical activity, shaded microclimates, sense of place, potential habitat within those microclimates, and potential for stormwater manamagement through swales. This table (Fig. 3.8) illustrates the ways in which specific design features can lead to many benefits.

	PHYSICAL	EMOTIONAL	EDUCATIONAL	ENVIRONMENTAL	ECONOMIC
DESIGN FEATURES					
Topographic variation					
Refuges					
Open-endedness					
Seasonal and annual change					
Wildlife habitats					
Graded challenge					
Manipulability (Loose parts)					
Differentiated settings					
People-plant interaction					
Accentuate existing assets					
Shade trees					
Permeable ground materials					
Paths and trails					
Stormwater infiltration and capture					
Accessibility: Universal design					
Unique and place-based					
Curriculum-engaged					
PROCESS FEATURES					
Participatory design and build					
Iterative approach					
Long-term stewardship					

Fig. 3.8: Design features and benefits of living schoolyards

Living Schoolyard Benefits

Living schoolyards benefit physical health, environmental health, and community well-being. Schoolyards that provide students with access to nature play and diverse types of outdoor activities at recess has been shown to “reduce aggression and anti-social behavior (Weinstein and Pinciotti 1988) (Schulman et al 2007). A study of governance structures and green schoolyard processes succinctly references the many benefits of living schoolyards:

“Naturalized schoolgrounds are known to have a wide range of benefits for schoolchildren and young adults (van den Bogerd et al., 2023). The frequent use of these spaces has been associated with diversified play and physical activity (Raney et al., 2019, Kemple et al., 2016, Mårtensson et al., 2014) leading to enhanced: i) physical and mental health (van Dijk-Wesselius et al., 2018, van Dijk-Wesselius et al., 2022; Marchant et al., 2019; Chawla et al., 2014); ii) emotional well-being (Bikomeye et al., 2021; McCormick 2017); iii) social (cohesion) (Bohnert et al., 2021, Raney et al., 2019, Lucas and Dymont, 2010); iv) cognitive development and academic achievement (Maes et al., 2021, Kuo et al., 2021, van Dijk-Wesselius et al., 2018); along with nature connectedness and socio-ecological consciousness (Jickling and Sterling, 2017, Dymont, 2005)” (Sekulova 2024).

Living schoolyard implementation also provides community-level benefits: equitable access to nature areas within public school grounds reduces crime and increases community cohesion (Sekulova 2024), supports the mental health of students, school employees, and neighbors (Stevenson 2021), and supports tree canopy throughout urban environments. Public living schoolyards are especially beneficial: “because school is compulsory and funded publicly in the United States (U.S.), integrating nature into school grounds would ensure that every child has access to nature in places where they are required to spend a significant portion of their daily lives” (Stevenson 2021).

Health and Wellbeing

Natural features in landscapes (such as logs, rocks, trees, and topography) promote active play. Movements including running and jumping are more frequent in living schoolyard landscapes (Sekulova

2024). For some children who may otherwise have been sedentary, natural spaces can encourage light to moderate activity (Sekulova 2024). A study evaluating physical activity after schoolyard greening found that up to 16.5% of children who were sedentary in their typically designed schoolyard were engaged in active play 16 months after greening (Raney et al 2021). Additionally, the percentage of students engaged in vigorous physical activity in their schoolyard post-greening increased from 15.6% pre-construction to 20% sixteen months after installation (Raney et al 2021). Studies also show that increased physical activity and small-ground play (promoted by the microclimates and diversity of living schoolyards) leads to fewer conflicts between students, decreased incidences of bullying, and greater social competency overall (Raney et al 2021).

Social Cohesion

Living schoolyards support positive social interaction among students. Studies of students’ social behaviors during recess pre- and post- greening report more positive interactions and fewer negative interactions after the implementation of living schoolyards or similar naturalized schoolyards (Raney et al 2021). Environments with diverse play opportunities are also more equitable, especially for student groups who have historically been excluded from highly competitive organized sports and ball-based activities (Sekulova 2024). Schoolyard greening has been shown to engage more girls in active, creative play when compared to open-space, sport-dominant schoolyards (Sekulova 2024). Diverse, multifaceted landscapes offer children multiple choices for how to spend their time, helping naturally reduce competition and conflict among children due to boredom or limited game space (Blanc 2025, Bonhert 2021). Living schoolyards specifically involve students and families in the process of design and stewardship of the schoolyard. Stewardship and community design practices support community cohesion, build community capacity, and engage multiple ways of knowing and learning.

Connection to Nature

Children benefit from regular access to nature. Studies have shown that informal play in nature supports mental restoration and increased creativity in play, and can support the development of

“environmental care and competence” (Stevenson 2021). Free play in nature, in which children engage in their environments without direct adult or activity prompts, is especially valuable for development. Stevenson writes, “Through spontaneous play, children connect to natural cycles, satisfy curiosities, and learn about their own capabilities in relation to the natural world, thus fostering a sense of place (Chawla and Derr 2012; Derr 2006; Tranter 2006). Children themselves recognize the importance of natural features for play and learning (Chawla et al. 2014)” (Stevenson 2021). Living schoolyards provide access to nature and free play within the school day, which equitably supports children in making long-term connections to nature and developing a sense of place within their communities without after-school or parental involvement. Additionally, the stress-relieving and psychological benefits of naturalized spaces in living schoolyards support children’s mental wellbeing. Increased nature exposure is correlated with lower levels of cortisol, a hormone that indicates stress (Sekulova 2024). The emotional benefits of living schoolyards also

include the mental benefits of participatory design processes, which support children’s sense of self and sense of place at school (Pearson 2017).

Conclusion

Living schoolyards are dynamic, inclusive landscapes. Landscape features including vegetation, loose parts, diverse play spaces, and natural materials support community cohesion and connection to nature. System features are equally important, and true living schoolyards must include curriculum connection and participatory design processes with students. The community-rooted processes of designing and managing living schoolyards are crucial design elements. For successful living schoolyard implementation and long term sustainability, leaders must embrace ongoing design and maintenance and be open to adapting implementation strategies to reflect community needs.

LIVING SCHOOLYARDS REFLECTIONS

- Living schoolyards benefit student and community health, wellbeing, and learning
- Living schoolyards provide urban green infrastructure that supports community resiliency and climate adaptability
- Living schoolyards must be built through processes and infrastructure that support dynamic landscape change over time while centering children’s wellbeing
- Benefits of living schoolyards increase when students are involved in ongoing participatory design
- Long term funding, leadership support, and supportive policies are foundations for successful living schoolyards



Fig 4.0 : OASIS schoolyard (CAUE 75)

CHAPTER 4

CASE STUDIES

How do public school districts implement and sustain equitable living schoolyards?

“Transforming schoolyards is not only about tackling climate issues, it is about something much bigger. It’s about providing spaces for a future generation to grow up in a better world,”

Raphaelle Thiollier, City of Paris

(“Case Study: France”)

Introduction

Despite decades of research, pilot projects, and community advocacy in support of schoolyard greening movements, sustaining living schoolyards at a citywide or district scale is a difficult task. Building systems that integrate community design, diverse play features, and ecological benefits requires community capacity, organizational capacity, and strong leadership support. For living schoolyards to fulfill their potential as integrated urban green infrastructure and community hubs, they must be implemented and sustained at scale. Equitable living schoolyard networks consider environmental justice as a foundational value (Sekulova 2024). When school districts allow greening projects to be funded and maintained by individual school communities, wealthier students receive the benefits of greening projects (Sekulova 2024). Implementing living schoolyards through institutional support networks can facilitate more equitable outcomes overall, due to funding that is not dependent on individual donors or wealthier neighborhood PTOs. The following case studies illustrate methods for successful schoolyard greening at a district scale. These projects were selected for their similarities to the constraints of SPS, which include urban sites, paved schoolyards, limited funds, and low capacity for maintenance pre-greening.

DISTRICT-SCALE LIVING SCHOOLYARD SYSTEM CASE STUDIES

The following case studies illustrate the scope, partners, strategies, and outcomes of living schoolyard projects at a district or city scale. Fig. 4.1 summarizes the major takeaways of each case study.

PROJECT SCOPE ICONS



Individual school or cohort of several schools



Entire district included in living schoolyard program

PROJECT PARTNERS ICONS



NGOs



School district



Government

Green and Healthy Schools
Milwaukee, Wisconsin

2018-present
Schools: 50



Cohort model- 5 schools/year



Reflo, Milwaukee Metropolitan Sewerage District, Milwaukee Public Schools

TAKEAWAYS

- Cohort model supports school district and NGO capacity building
- Participatory design processes support overall community investment
- Partnerships with NGOs and municipal departments make participatory design and stewardship possible

Oakland Unified School District
Oakland, California

2019-present
Schools: 22 of 87



Entire school district



Trust for Public Land, Oakland Unified School District

TAKEAWAYS

- NGO partnerships can support capacity-building processes including writing district design guidelines, advocating for state policy, and post-installation landscape monitoring
- Clear living schoolyard guidelines provide achievable and standardized approaches to dynamic ecological landscapes
- Leadership support is necessary for district process change

OASIS Schools
Paris, France

2018-present
Schools: 130 of 745 total



Entire school district



City of Paris, Paris public schools

TAKEAWAYS

- Strong support from city leaders provides infrastructure for efficient scaling and implementation
- Commitment to natural materials and vegetation supports student learning
- Participatory process engages students and families

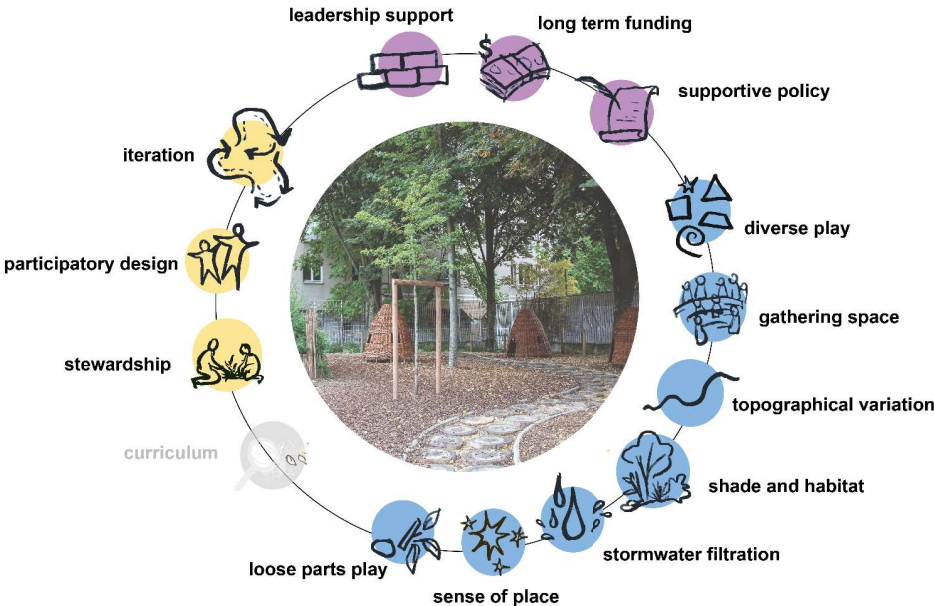
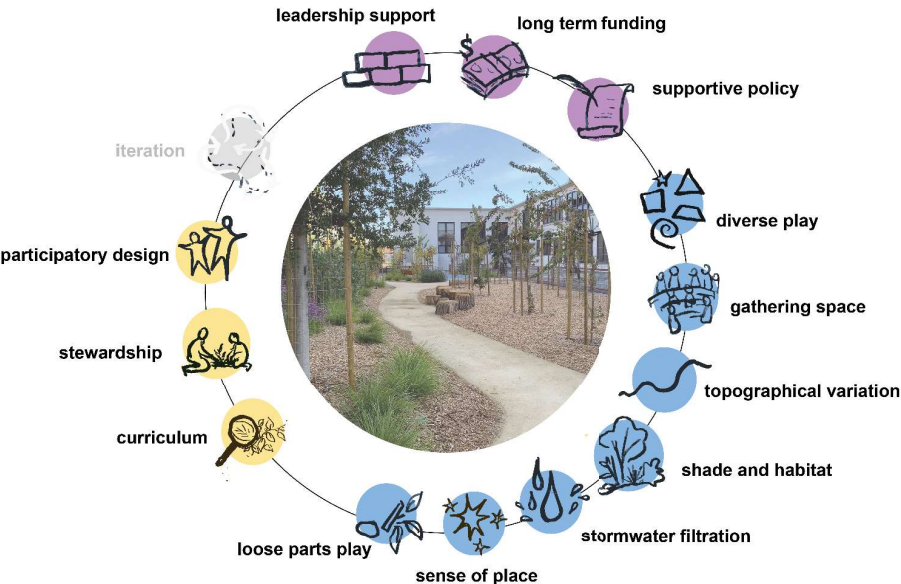
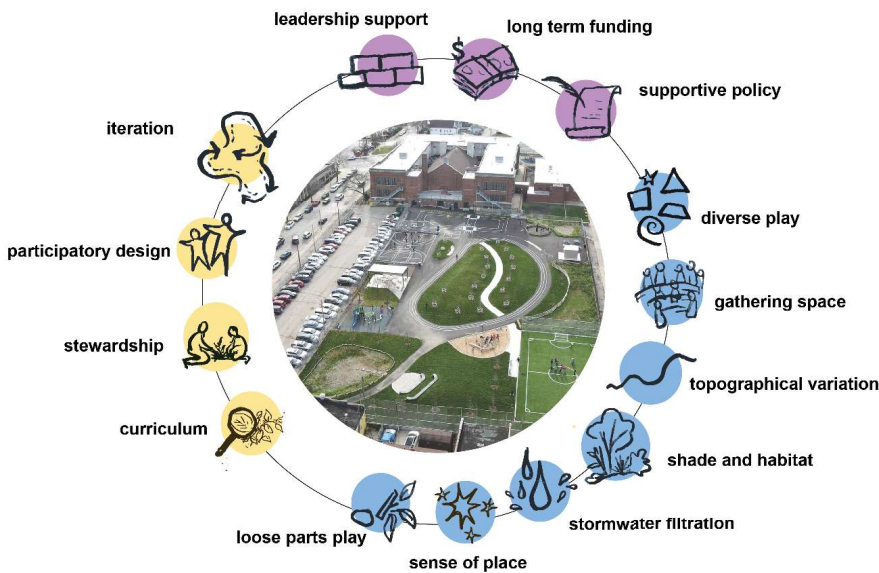


Fig. 4.1: District-scale case study comparison diagram

GREEN AND HEALTHY SCHOOLS

Milwaukee, Wisconsin

Date Implemented: 2018-present

Total schools: 50 (as of 2026)



SCOPE: Phased 3+ yr. schoolyard retrofit projects, 5 schools per annual cohort

GOALS

- Green stormwater infrastructure
- Community health
- Sustainable long-term management



STRATEGIES

- Partnerships increase organizational capacity
- Cohort model supports sustainable scaling
- NGO manages design process
- Iterative and participatory process supports community buy-in long term
- Stewardship and maintenance built in to expectations for schoolyard from the start



PARTNERS

- Reflo (NGO)
- Milwaukee Public Schools
- City of Milwaukee Department of Public Works
- Milwaukee Metropolitan Sewerage District (Reflo).
- NGO funders

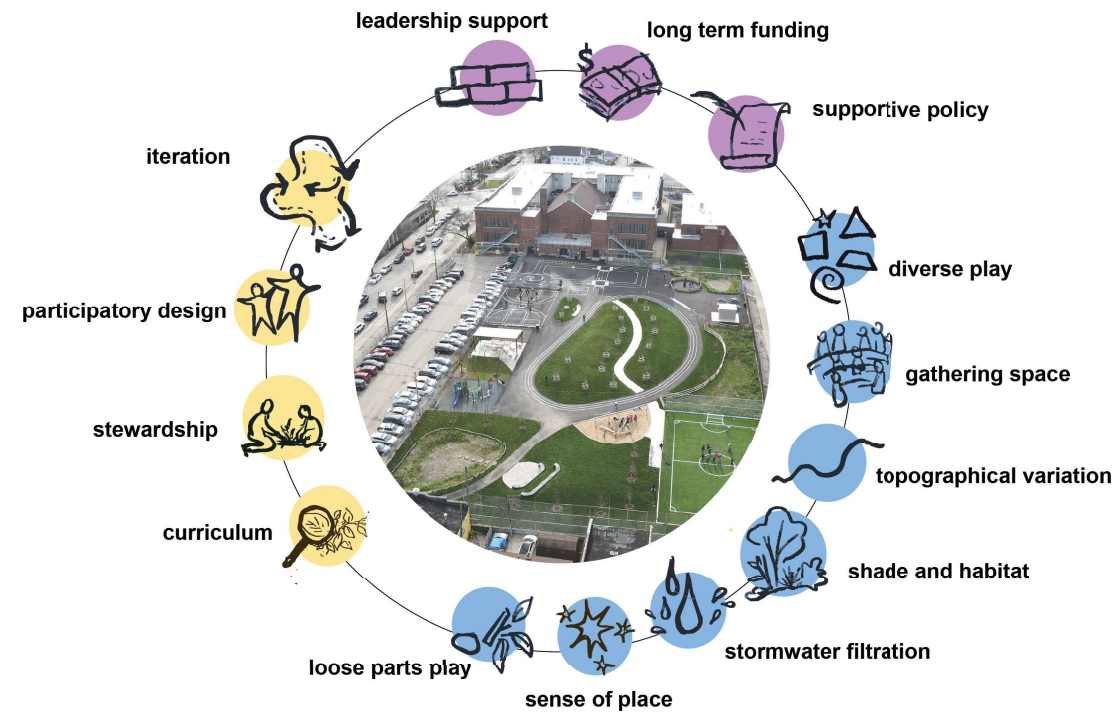
OVERVIEW

Reflo, a nonprofit founded in 2012, manages the Green and Healthy Schools initiative of the city of Milwaukee. The projects involve depaving Milwaukee schoolyards and supporting the design and construction of greenspaces and stormwater management systems within schoolyards. The program is part of the larger Green and Healthy Schools Wisconsin program, a state initiative.

TAKEAWAYS

Partnerships between Reflo, Milwaukee Public Schools, and the Milwaukee Metropolitan Sewerage District are crucial for program success. Reflo manages and supports the design process with school communities, which creates capacity for relationship building, iterative design, and long-term stewardship. The cohort model supports sustainability for the initiative overall.

Fig. 4.2: Green and Healthy Schools living schoolyard system elements. Green and Healthy Schools project Forest Home Avenue School featured in center.



BENEFITS



Features vary from school to school, but all include GSI, trees and native plants, natural materials for site furnishings, and dedicated community design processes. Curriculum and people-plant interaction are notable elements. These features contribute to physical activity, shade and cooling, air quality, community green space, sense of place, community cohesion, connection to nature, sense of belonging, student focus, experiential learning, stewardship, biodiversity, pollinator habitat, and stormwater management.

PROCESS

The process of schoolyard greening begins school community interest. Five schools are selected to participate in the schoolyard redesign process each year. Reflo supports each cohort of schools in a 3+ year phased design development process, including conceptual planning, fundraising, detailed design and permitting, construction, and stewardship and maintenance.

Interested schools must apply for the program before design can begin. Prior to acceptance, schools must demonstrate community interest, stewardship plans, and leadership commitment. As of 2026, ten cohorts have entered the program. Seven cohorts (35 total schools) have entered the “stewardship and maintenance” phase, indicating completed initial installation. Once selected, participatory design and planning with students, teachers, and families begins. The conceptual planning process lasts for one year. Fundraising is supported by Reflo and the school community, and grants are sourced from external donors. Permitting and construction begin in the third year. Students and families are welcomed throughout the process, though construction is completed by contractors. Beyond year three, Reflo provides schools with curriculum and stewardship support. Ongoing maintenance and stewardship are part of the initial project scope, which supports project longevity and community buy-in beyond initial design phases.



Fig. 4.3: Native plants and shade structure (Reflo)



Fig. 4.4: Crossing a bioswale (Reflo)

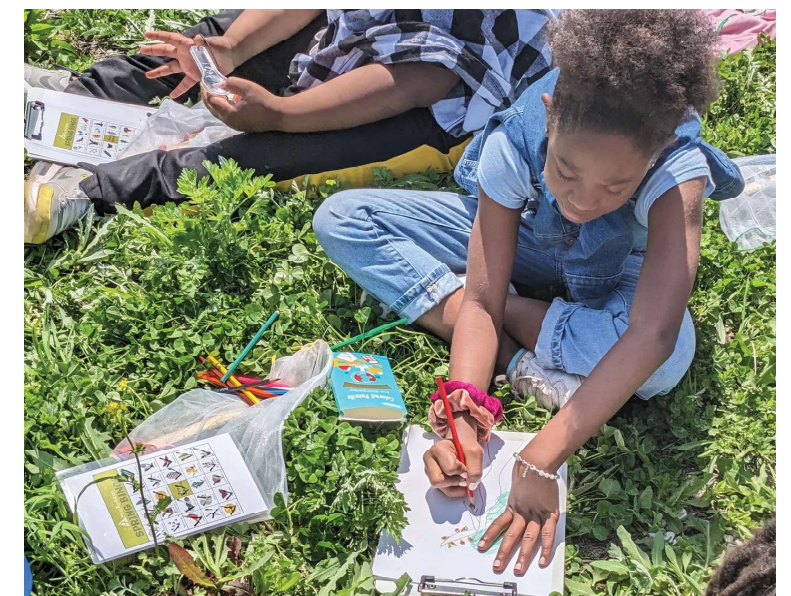


Fig. 4.5: Outdoor learning curriculum (Reflo)

OAKLAND LIVING SCHOOLYARDS

Oakland, California

Date Implemented: 2019-present
Total schools: 22 of 87

 SCOPE: All schools in Oakland Unified School District

GOALS

- Public health
- Equitable greenspace
- Community engagement
- Childrens’ joy

 STRATEGIES

- Partnerships increase organizational capacity
- Clear design guidelines provide baseline expectations for all schoolyards
- District board policy is catalyst for organizational process change

 PARTNERS

Several nonprofit partners support OUSD with living schoolyard infrastructure, planning, and implementation. Trust for Public Land and Green Schoolyards America provide research, policy advocacy, process guidelines, curriculum support, and fundraising.

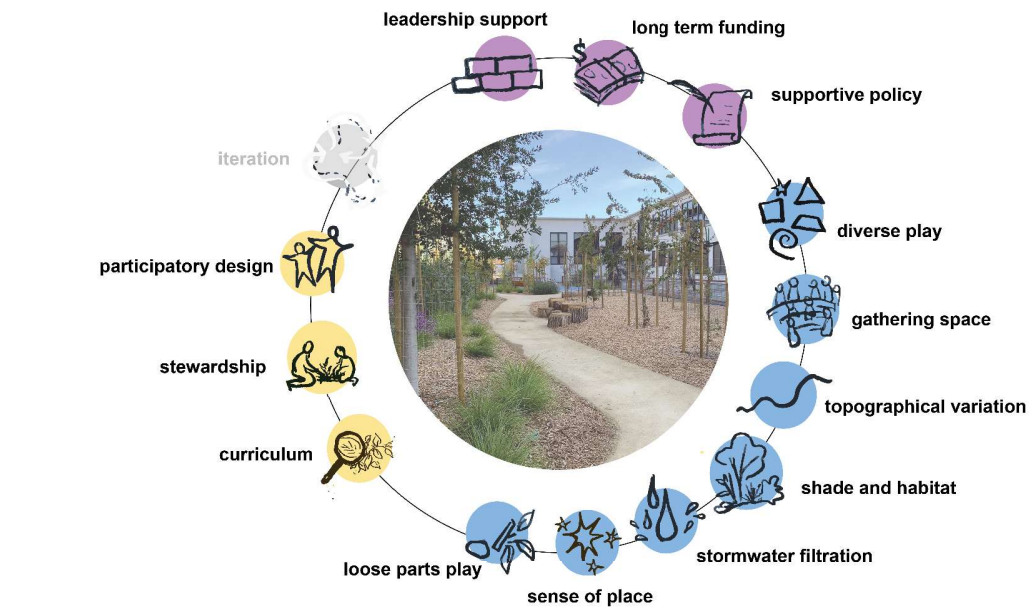
OVERVIEW

The Oakland United School District (OUSD) serves 33,995 students at 87 schools (OUSD Fast Facts 2025). In partnership with several nonprofit organizations, the Facilities Management and Planning Department aims to “redesign and reimagine next-generation schoolyards that provide dynamic spaces for health, wellness, and academic success” (OUSD Living Schoolyards website). As of early 2026, there are 22 completed living schoolyard projects with several more in the planning stages.

TAKEAWAYS

The supportive policy and organizational processes implemented by OUSD are effective strategies for ditrict-wide program success. Major support from Trust for Public Land was the catalyst for institutionalizing the Living Schoolyard Board Policy and the Living Schoolyard Guidelines.

Fig. 4.6 : OUSD living schoolyard system elements. Markham Elementary schoolyard featured in center (Trust for Public Land, diagram by author).



BENEFITS



Features are variable and depend on unique school community preferences. However, natural site fixtures, permeable ground materials, trees and planting areas, gathering spaces, and participatory design practices are present in all schoolyards. The benefits of these features include physical exercise, shade and air quality improvement, community greenspace, enhanced sense of place and belonging, experiential learning, community cohesion, stormwater management, and improved focus during classroom learning.

PROCESS

In 2019, OUSD passed the Living Schoolyards Policy and the Environmental and Climate Change Literacy Policy. These policies are complementary, both creating paths toward schoolyard greening and dynamic schoolyard environments for Oakland’s students. The Environmental and Climate Change Literacy Policy supports curriculum alignment with California state standards on climate change and environmental studies. The policy commits OUSD to providing teacher training and support for integrating project-based sustainability curriculum into Oakland schools. The Living Schoolyards Policy specifies the vision for green community schoolyards and outlines an implementation plan for the district. These policies were developed through significant support by outside organizations including Trust for Public Land and Green Schoolyards America. As the policies were developed, Trust for Public Land simultaneously designed and implemented five living schoolyard pilot projects throughout Oakland. Living Schoolyards Guidelines were published in 2022, offering specific design details and specifications for living schoolyard construction. As of early 2026, OUSD uses the Living Schoolyard Guidelines to design sites. Community engagement is prioritized during planning and design. For many parts of the construction process, community members and students are invited to participate in the building of their schoolyards. OUSD Facilities works with contractors and school staff to navigate the construction process.

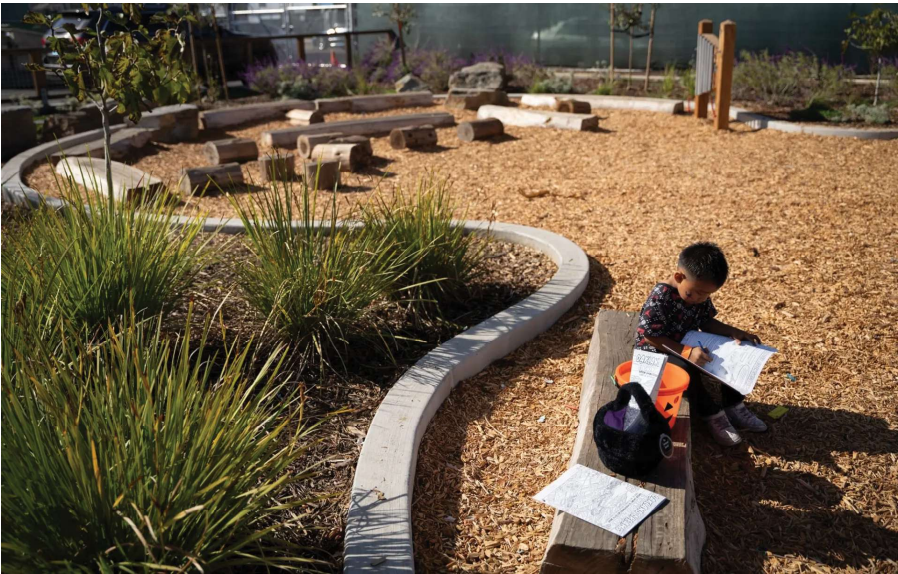


Fig. 4.7: Rest area and gathering space (Trust for Public Land)

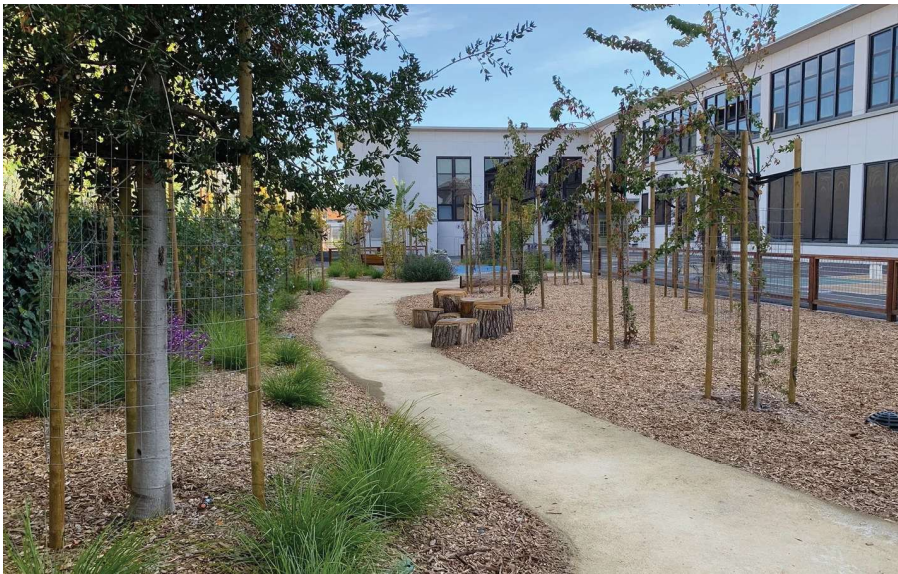


Fig. 4.8: Markham Elementary (Trust for Public Land)



Fig. 4.9: Students in the garden (Trust for Public Land)

OASIS SCHOOLYARDS

Paris, France

Date Implemented: 2021-present
Total schools: 130 of 745



SCOPE: All public schools in Paris



STRATEGIES

- City government supports design and implementation processes, decentralized from school district internal processes
- Partnership with communities creates unique and place-based landscapes
- Iterative and participatory process supports community buy-in long term
- Pilot program allowed for process refinement before citywide scaling



PARTNERS

- City of Paris
- ESIEE (research institute)
- LIEPP (research institute)
- CAUE de Paris, public architecture and urban planning
- Ligue de l'enseignement (Federation of Paris)
- Meteo France (Climate institute)

OVERVIEW

This project is a City of Paris initiative to reduce urban vulnerability to heat waves as the negative effects of climate change increase UHI and air pollution. OASIS ('Openness, Adaptation, Sensitisation, Innovation and Social Ties') schoolyards provide an example of successful large scale initiatives funded and organized by government organizations for the benefit of public schools that do not rely on private funding or school district funds.

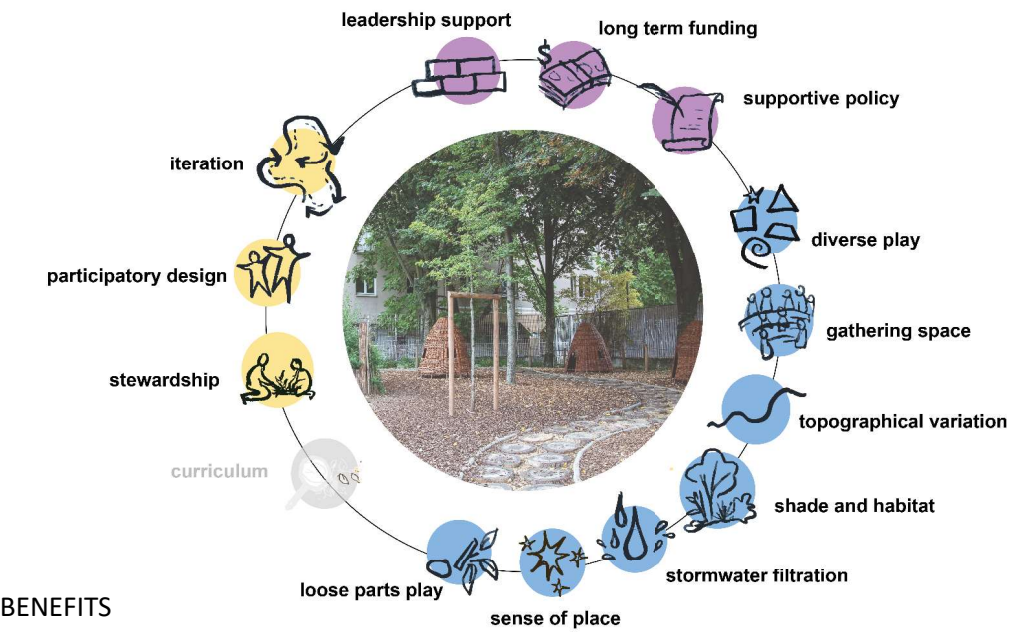
TAKEAWAYS

OASIS schoolyards combine institutional support and participatory design processes to achieve ecological, educational, and evolving schoolyards. The emphasis on community input gives each school a strong sense of individual identity. Although the schoolyards are not strictly designed to change over time, the process of initial design involved community knowledge-sharing and organizing. The emphasis on education throughout the remodel gives community members the knowledge and skills needed to change the schoolyard as needed in the future. Another contributor to overall project success was the rapid adoption of the OASIS initiative by Paris city leaders, which built capacity and momentum for change. Policy, funding, labor, and ongoing research all aligned to support the remodel process.

GOALS

- Children's health
- Green infrastructure
- Community engagement
- Climate adaptation

Fig. 4.10 : OASIS living schoolyard system elements. OASIS remodeled schoolyard featured in center (CAUE 75, diagram by author).



BENEFITS



Each site is uniquely designed by and for the school community. However, program-wide features include natural materials, emphasis on vegetation within student play areas, diverse play features, permeable surfaces, gathering areas, student art, and community design. The benefits of these features include physical exercise, shade and air quality improvement, community greenspace, enhanced sense of place, connection to nature, sense of belonging, community cohesion, experiential learning, biodiversity, and stormwater management.

PROCESS

The City of Paris has adopted several climate-supportive policies, which lay the foundation for supportive leadership, policy reinforcement of goals, and overall goal alignment. Policies include the Paris Climate Adaptation Plan, the Biodiversity Plan, the Paris Rain Plan and the Circular Economy Action Plan ("Case Study: France"). A pilot program funded by the Urban Innovations Program of the European Union supported the remodel of 10 schools to support climate goals in 2019, which inspired the City of Paris to adopt the program for all schools. The initial pilot phase allowed project leaders to take an iterative approach as they gained experience, resulting in a focus on vegetation, organic materials, and community. The project intentionally pursues low-cost design solutions that involved community participation at every stage, from design to stewardship. Natural materials are used for ground surfaces and shelters, with some schoolyards incorporating willow or other woven branch forms throughout their yards. The natural materials are inexpensive to reproduce and maintain, and they provide educational value to children's play. (OASIS takes off! - Final Journal | Portico) The Paris City Council primarily relies on its central and neighborhood specific services to design, implement, and manage each OASIS project. Schools are selected by criteria to determine their existing conditions, needs for renovation, and available budgets. The OASIS project incorporates landscape evaluation as well as design guidelines. Research teams evaluate social and environmental impacts of the schoolyards post-installation. The project design team created a recommendations booklet for living schoolyard implementation intended for international distribution. (Recommendations Booklet Oasis) These guidelines advise best practices and important considerations for communities interested in living schoolyards.



Fig. 4.11 : Playful topography integrates climbing and slides. Living willow shelters provide refuge and people-plant interaction ("Case study: France").



Fig. 4.12: Woven willow baskets and short concrete tunnels provide children with refuge for play and shady areas during warm weather ("Case study: France").

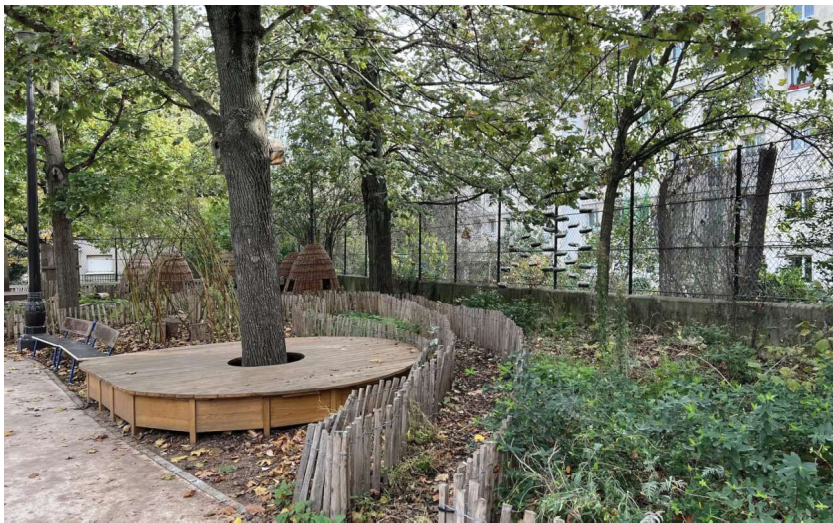


Fig. 4.13: Wooden site fixtures provide rest areas and protect trees. Fence art and screens create a sense of place and privacy ("Case study: France").

Conclusion

How can these precedents inform the development of equitable and sustainable living schoolyard implementation in Seattle Public Schools?

All precedents demonstrate the feasibility of designing, constructing, and maintaining living schoolyards within an urban public school district. Both OUSD and Milwaukee school district include students in the design, construction, and stewardship of their schoolyards. Oasis schools include students in conceptual design and potentially allow students to help with maintenance in a community work party setting outside of school hours. Funding strategies range from governmental (OASIS) to nonprofit and state grants (OUSD and Green and Healthy Schools), but all projects have strong collaboration with municipal or state governments.

OUSD shows the advantages of a policy approach with the successful combination of supportive policy at district and state levels. Additional policy addresses curriculum and teacher training, which support the use and stewardship of landscapes once implemented. The Oakland living schoolyard program benefits from long term partnerships with outside organizations,

which work in collaboration with the school district to design, implement, and maintain the landscapes. Additionally, the Living Schoolyard Guidelines provide clear instructions for acceptable design choices and material uses within a living schoolyard. The guidelines provide a working definition of living schoolyards while also scaffolding designs that consider the reality of public school constraints. This precedent is an excellent potential model for Seattle Public Schools, but strong partnerships with nonprofit organizations and policy connections take time and energy to build. Adopting a long-term goal of establishing similar living schoolyard policies in Washington state could guide Seattle Public Schools district planning and partnerships in the short term.

The Green and Healthy Schools program is similarly supported by state-level organization and collaboration between state, municipal, school district, and nonprofit partners. The long-term approach to design and maintenance encourages stewardship of schoolyard landscapes rather than replicating the standard schoolyard model, which can result in plant death and restrictive features due to lack of capacity for care.



Fig.4.13: Gathering area, planting area, and log bench in an Oakland living schoolyard. (Trust for Public Land)



Fig.4.12 : Students play in a remodeled Green and Healthy Schools nature play area. (Milwaukee Metropolitan Sewerage District)

CASE STUDIES REFLECTIONS

- Strong leadership support is important for scaling living schoolyard projects
- Policies can reinforce leadership support and incentivize systemic change
- Building capacity for change through NGO support or government support can enable underfunded school districts to implement organizational change over time (OASIS supported by City of Paris, Green and Healthy Schools supported by Reflo, OUSD supported by Trust for Public Land)
- The cohort model adopted by Reflo for Milwaukee’s Green and Healthy Schoolyards supports steady change; this may be a strategy to emulate.



Fig.5.0: View Ridge Elementary School grades K-2 playground, looking toward the east covered play area.

CHAPTER 5

SEATTLE PUBLIC SCHOOLS

How do existing SPS priorities, procedures, and policies influence schoolyard design?

Introduction

Why are Seattle’s public schoolyards still covered in asphalt? Interviews, literature review, and precedent study reveal the ways in which policies, SPS priorities, and typical SPS processes impact schoolyard features and functions. Paved schoolyards persist due to systems that reinforce limited play features and disincentivize depaving. Lack of funding is a barrier to change, but as demonstrated by previous case studies, strong leadership, organizational processes, and partnerships can successfully fund living schoolyards in public schools. As SPS currently operates, district leaders reinforce paved schoolyards by omission. Leadership prioritizes schoolyard design and maintenance systems that emphasize efficiency, lowest possible budgets, and limit liability. These systems fail to build capacity for community engagement, plant-people interactions, and risky play, which support overall health and wellbeing. This chapter discusses existing SPS design processes and maintenance systems, as well as the policies that reinforce those processes. Case studies of three SPS elementary schools demonstrate ways in which those systems manifest in landscape features and processes. These case studies provide several examples of living schoolyard-supportive innovations by community members, designers, and district employees that resist

typical SPS process norms. However, these case studies also demonstrate the limitations of these innovations and the barriers that prevent greater systemic change. This chapter concludes with a discussion of stakeholders and opportunities that may provide SPS with incentives for large-scale change.

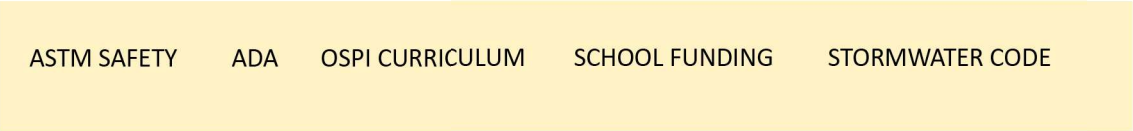
SPS Institutional Priorities

The U.S. public education system prioritizes test scores, discipline, and surveillance over student learning and wellbeing (Kupchic 2009). These priorities contribute to high-control, high-visibility school environments. Like many large public school districts, SPS struggles with systemic underfunding by federal and state governments. Funding challenges exacerbate cultures of rigidity organizationally and at individual schools, some of which struggle to provide basic educational necessities like teachers, recess supervisors, and school supplies (Buhain 2023). Budget stress leads to risk aversion (Plyler 2026), reliance on private funding subsidies (Buhain 2023), and low investment in landscape maintenance district-wide (Plyler 2026).

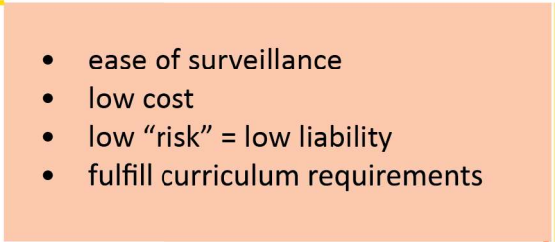
SPS institutional priorities shape schoolyard features, design processes, and maintenance regimes. Public

POLICY INFLUENCES ON SPS SCHOOLYARD DESIGN

FEDERAL, STATE, MUNICIPAL LAWS



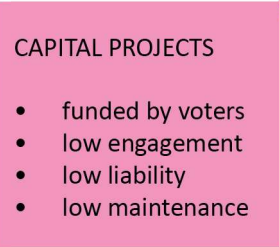
SPS SCHOOLYARD PRIORITIES



SPS POLICIES



PROCESSES



schoolyards are not perceived as valuable learning environments, which leads to underdesigned and under-utilized outdoor spaces. The Washington Office of Superintendent of Public Instruction (OSPI) institutes mandatory standard curriculum for public schools in Washington state, and those curricula are largely centered around indoor, test-focused learning (Biggs 2026). SPS elementary students access schoolyards for 30 minutes a day at recess (State of Play 2019) and during some physical education (P.E.) units, but otherwise do not spend required learning time in outdoor spaces (Biggs 2026). Schoolyards are designed to support P.E. curriculum and basic free play (Plyler 2026). SPS prioritizes low-cost, low-liability, high-surveillance schoolyard design, reinforcing the underutilization of schoolyards as rich learning environments. Interviews with SPS employees and landscape architects revealed district leaders’ resistance to investing in vegetation within play areas, depaving majority-imperious schoolyards, and preference for lowest-risk possible play features (Plyler 2026, Ho 2026, Morin 2026, Higbee 2026, Brown 2026, Biggs 2026, Weinstein 2026). SPS leaders including the Superintendent and elected school board members reinforce these preferences through school board policies, educational specifications that list requirements for schoolyard design, and restrictive required curriculum (Biggs 2026). SPS schoolyards are limited by restrictive organizational priorities, limiting educational specifications, and lack of engagement from SPS leadership.

Policies

Federal, state, municipal, and SPS organizational policies implicitly and explicitly shape SPS schoolyard design. Federal policies require a baseline of equipment safety and schoolyard accessibility. The American Society for Testing and Materials (ASTM) provides standards for play equipment safety (Public Playground Safety Handbook 2025). The Americans with Disabilities Act (ADA) requires that play areas be readily accessible to all students (U.S. Access Board). Although student safety drives the ASTM standards, SPS restricts play features that would be officially permitted by the requirements of the ASTM (Higbee 2026, Public Playground Safety Handbook 2025). SPS restricts swings, railless platforms over 18”, and shade structures over paved areas (Higbee 2026, Morin 2026, Generic Educational Specifications). ADA requirements include physical access to play features (U.S. Access Board). Basic compliance with ADA includes ramps, rails, and ground-level play features. Basic play component requirements include ground-level access to different types of play features that vary depending on the number of elevated play features offered. When a play area has

between two and four elevated play components (slides, climbers, and other above-ground features), ADA requires that there be one ground-level play component (U.S. Access Board). The limited elevated play features in SPS schoolyards leads to limited ground-level features as well. Play diversity is an essential element of accessibility, but risk aversion on the part of district leadership prevents swinging, climbing, and spinning within Seattle Public Schools schoolyards. The intent of the ADA is to protect the rights of disabled individuals, which include the right to a quality education. The current SPS interpretation of ADA standards justify extensive paving, but do not fully adopt the spirit of the regulation to create inclusive, diverse play experiences.

Municipal and county policies shape SPS schoolyards in less physically obvious but equally impactful ways. The City of Seattle Stormwater Code significantly impacts the design of public schoolyards. First adopted in 2009, this regulation requires Seattle properties to control and store stormwater within their property boundaries. (Online Information Resources - CityClerk) This is an environmentally beneficial regulation that protects water quality and marine life, but installing stormwater management systems is costly. The high initial cost of bringing landscapes up to city and federal codes deters the SPS from depaving or fundamentally changing schoolyard design (Brown 2026), which reinforces the asphalt-dominant schoolyard typology (Ng 2024). Paved surfaces are not exempt from policy impact, however. The City of Seattle collects surface water management fees, or drainage fees, calibrated to the percentage of impervious surface covering a parcel of land. Seattle Public Utilities sets the costs for drainage fees, which are collected through King County property taxes. Due to increasing drainage fees and significant amounts of impervious surfaces, the choice to maintain majority hard surface landscapes is an increasing financial challenge for SPS facilities. Seattle Public Schools owns and manages 670 acres of land within the city of Seattle, and of those acres, 451 are categorized as “moderately heavy” (45-65% impervious), “heavy” (65-85% impervious), or “very heavy” (85-100% impervious) (SPS Drainage Parcel Fee Calculations). As of 2026, surface stormwater management fees are the third largest expense for the SPS facilities department (Brown 2026). Projected cumulative bills for Seattle Public Schools stormwater fees between 2020 and 2026 are \$27,381,520.18 (SPS Drainage Parcel Fee Calculations). Cumulative drainage fees may incentivize long-term cost-benefit analysis of GSI installation and depaving SPS schoolyards, but current SPS facilities policy prioritizes maintaining, not reducing, the ratio of impervious surfaces per parcel (Brown 2026).

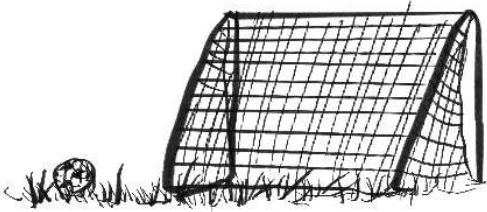
Fig. 5.1: Influences on priorities and processes of SPS schoolyard design

FEATURES REQUIRED BY EDUCATIONAL SPECIFICATIONS

“Grades K or 1 through 5 play area to consist of all-weather surface play area (typically asphalt) and a minimum of one age-appropriate play structure for 5 to 12 year olds.”



“Ideally, one 360’ x 250’ field for soccer (or as large as can be accommodated)”



“all weather surface area that is at least 1 acre in size”

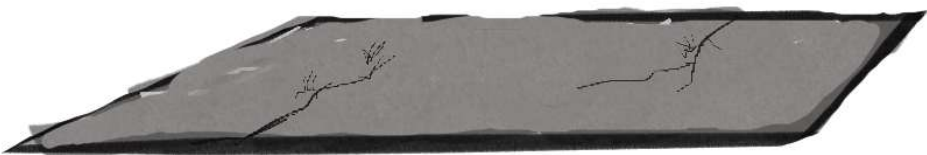


Fig. 5.2: Illustration of prominent requirements for SPS schoolyards as listed in the Elementary Educational Specifications. Annotations are sourced from SPS Elementary Educational Specifications.

SPS organizational policies shape schoolyard features through design guidelines, curriculum, design processes, and maintenance systems. Existing design processes are largely institution-driven and do not involve meaningful community engagement practices (Higbee 2026, Ho 2026). Educational specifications provide guidelines for schoolyard features, and maintenance systems determine irrigation, plant care, mowing, and surface upkeep (Plyler 2026). Current SPS design processes, educational specifications, and maintenance systems are further discussed in detail in following sections of this chapter. Although there has been some interest by SPS leadership to engage with outdoor learning practices more meaningfully, board policies that declare commitment to outdoor learning have not been followed by design process or system change (Biggs 2026). In 2020, the Covid-19 pandemic instigated outdoor learning as a method of disease prevention. Seattle School District #1 Board Resolution Resolution No. 2020/21-4.2 established the Outdoor and Community Learning Task Force from 2021-2024. The task force published the SPS Outdoor Learning Strategic Plan in 2024, which recommends the district prioritize curricular connection to outdoor spaces, empowering existing school leaders in outdoor

learning, and building capacity for stronger organizational partnerships between SPS and nonprofits (Barber 2024). Leadership turnover has slowed momentum for SPS outdoor learning (Biggs 2026), but SPS employees in the facilities department, capital projects department, and resource conservation department are working to spread awareness of the strategic plan (Biggs 2026). The following school board resolutions declare intent to support living schoolyards, but typical processes do not meet the goals stated by the policies below.

Seattle School District #1 Board Resolution Resolution No. 2020/21-4.2

“BE IT FURTHER RESOLVED that the Superintendent is directed to begin a process of collaboration with state and local government agencies to explore development of curricula focused on outdoor-based activities, on applicable health and safety measures, and on the ability of Seattle Public Schools to use public outdoor spaces for educational purposes.”

2020 School Board Motion, September 18, 2020

“WHEREAS, Seattle Public Schools aspires to respond to the most difficult education challenge of our time not through fear and status-quo thinking, but with courage and creativity, engaging with families, community and nature in co-designed solutions based in hope and connection, drawing on the strengths of our communities and families;

WHEREAS, Seattle Public Schools has the opportunity to lead the way and demonstrate that real partnerships can quickly evolve to stand up innovative education models in support of students’ social-emotional and academic needs, with care and safety, affording parents the ability to keep their employment and family lives stable and, hopefully, thriving”

Design Process

There are two official ways to change a SPS schoolyard: community-driven Volunteer Enhancement Program projects, or voter-funded, district-initiated capital improvement projects (Weinstein 2026). Major site modifications must follow the standard requirements for the design of school environments outlined by SPS educational specifications. Smaller projects initiated by school community members are categorized as VEP projects, which are vetted and authorized by district employees to guarantee alignment with SPS priorities and guidelines (Weinstein 2026). The existing educational specifications require schoolyard designers to include large paved areas for structured active play but do little to specify how schoolyards might include planting areas, loose parts play, or quiet areas for creative play (Generic Elementary Educational Specifications).

Educational Specifications

Schoolyard design is shaped by the district’s need for low-cost, low-maintenance spaces that minimize student risk of bodily harm with very little adult supervision. These constraints largely stem from limited funding, which results in high student to staff ratios, limited landscape maintenance, and short design timelines resulting in limited community engagement processes. Educational specifications define required features for SPS schoolyards. These specifications codify and reinforce design priorities through the inclusion and exclusion of schoolyard features and processes. The perception of risk shapes many elements of schoolyard design. Trees are perceived as risky for students due to possible limb drop (Morin 2026). Trees

and shrubs that have dense foliage are perceived as risky due to sightline interruption, which requires additional supervision that challenges already overburdened recess supervisors (Ho 2026). Risks of limb drop, tree breakage, and limited visibility can be easily managed by providing adequate plant stewardship, but maintenance capacity and leadership priorities disregard this systemic irony. SPS preferences for plastic grass over natural turf or other organic ground surfaces stem from maintenance limitations and overall avoidance of messiness caused by wet grass and mud, liabilities of pitted turf, and desire for visual continuity. Sekulova writes,

“A key aspect associated with the effective and responsive governance of schoolyards concerns their design and features. Currently, one may observe a preference for neat and orderly outlooks, with certain avoidance of messiness and loose elements. However, it is precisely such features that powerfully benefit cognitive development, creativity and social skills, allowing children to manipulate and assign schoolyards with a meaning themselves (Van Dijk et al., 2022, 2018)” (Sekulova 2024).

Despite the noted benefits of loose elements for children’s learning, the elementary educational specifications do not include vegetation, organic ground materials, or creative loose parts play (Generic Elementary Educational Specifications).

Spaces for organized ball games are disproportionately large in typical SPS schoolyard designs, which may be a result of both the low cost of hard surface play areas and societal emphasis on organized sports over other forms of play (Generic Elementary Educational Specifications). Current educational specifications require elementary schoolyards to provide students with contained areas for active play during recess and P.E. classes. Large hard surface “play” areas (ideally 1 acre) are required. There are no requirements for schoolyard play areas to include trees, shade canopies, or natural areas. Spaces for organized ball games are disproportionately large in typical SPS schoolyard designs, which may be a result of both the low cost of hard surface play areas and societal emphasis on organized sports over other forms of play (Generic Elementary Educational Specifications).

Additional requirements for schoolyards include outdoor learning areas and structured play areas. Outdoor learning areas must include a gathering area for 30 students, “growing beds, compost area, and circulation”, and a water source for irrigation. They suggest that “if there is a water feature on site, consider locating outdoor

learning area nearby”. Structured play areas are spaces for “free play and P.E. classes”. They must include “all weather surface area” (typically asphalt) that is “at least 1 acre in size” when site constraints allow. Additionally, a “Covered play area should be provided if possible. When site constraints allow, [the] area should be approximately 3,000 SF” The location of the covered play area “ shall be easily accessible from [the] indoor PE teaching area. In order to provide cover for bus loading queues, a location near the bus dropoff /pickup area may be preferred if that location does not subject students to excessive traffic noise, vehicle exhaust, or other health or safety concerns.” These spaces should also “provide handicapped accessible equipment and play areas” (Generic Elementary Educational Specifications).

These specifications fail to account for the negative learning and health impacts of limiting types of play to hard surface play areas and game-centric spaces within elementary schoolyards. Hard surface play areas make up the majority of SPS elementary schoolyards, but only serve a small proportion of the student population. Research shows that environments that provide students with diverse play opportunities, varied topography, change over time, and the opportunity to shape their environment through play benefit students’ wellbeing (Bohnert 2021). The lack of specificity and infrastructure to support rich outdoor learning environments within the current ed specs leads to underutilized, over-paved spaces. Although gardens are included in elementary ed specs, the burdens of garden upkeep and creating curricular connections fall on teachers and staff with limited capacity (Weinstein 2026).

The SPS required curriculum does not include outdoor learning, and students have limited access to vegetation in free play areas. Most trees and shrubs in schoolyards are located within curb-facing planting areas that students cannot reach during recess. Hard surface play requirements within the required P.E. curriculum further reinforce the overabundance of asphalt in schoolyards. The existing SPS physical education curriculum requires the inclusion of paved outdoor areas in schoolyards, but does not address the physical and mental benefits of nature in elementary lessons (Generic Elementary Educational Specifications).

Maintenance

Funding limitations significantly restrict maintenance of SPS schoolyards. Maintenance staff capacity within SPS facilities is extremely limited, providing each school with only four hours of maintenance per month (Plyler 2026).

Typical maintenance tasks include lawn mowing, trash pickup, basic trimming of street-facing landscaping, and leaf blowing (Plyler 2026). Due to the perceived need for curb appeal and broad voter support, cleanliness and perceived orderliness shape design and maintenance decisions. The desire for curb appeal also directs designers to locate the majority of trees and vegetation within schoolyards outside of student-accessible play areas. Sense of order and curb appeal reinforces the presence of paved surfaces in student play areas as well. Paved areas are low-maintenance and visually cohesive, contributing to the sense of order and control in a schoolyard without requiring the time, expertise, and liability of tree and plant management practices (Plyler 2026). Vegetation that is included in student play areas of schoolyards is limited to hardy, drought-tolerant, and adaptable plants. Plants receive minimal weeding or irrigation after the contractor-maintained three-year plant installation warranty period, which has resulted in complete plant die-off during summer droughts (Plyler 2026). The cited reason for lack of maintenance and irrigation capacity is lack of funding. (Plyler 2026). However, lack of funding reveals underlying SPS leadership priorities: the schoolyard landscape is not perceived as important for students’ learning and health.

Capital Projects

Schoolyard design within Seattle Public Schools is determined by district educational specifications and capital projects design teams. For major renovation projects, the district hires architecture and landscape architecture firms to complete design and implementation of the new school and schoolyard. For smaller projects or remodels not done by design firms, the capital projects design teams complete planning, design, and implementation internally. All designs regardless of project scale must fulfill the Seattle Public Schools educational specification standards. Major preventative maintenance, major schoolyard renovations, and school replacement projects are completed by the Capital Improvements Department (“SPS Capital Projects and Planning”). These projects are initiated by the school district and funded by voter-approved capital levies, the Building Excellence (BEX) and Buildings, Technology, and Academics (BTA) levies. These levies are each on six-year cycles, staggered to alternate every three years. Funding for the levy is continuous throughout the six year cycle. The current capital levies are BTA V, a \$783 million levy funding school building and playground improvements, and BEX VI, a \$1.8 billion levy funding building renovations and playground improvements. Of the BEX VI funds, \$1,385,022,403

SPS CAPITAL PROJECTS DESIGN PROCESS

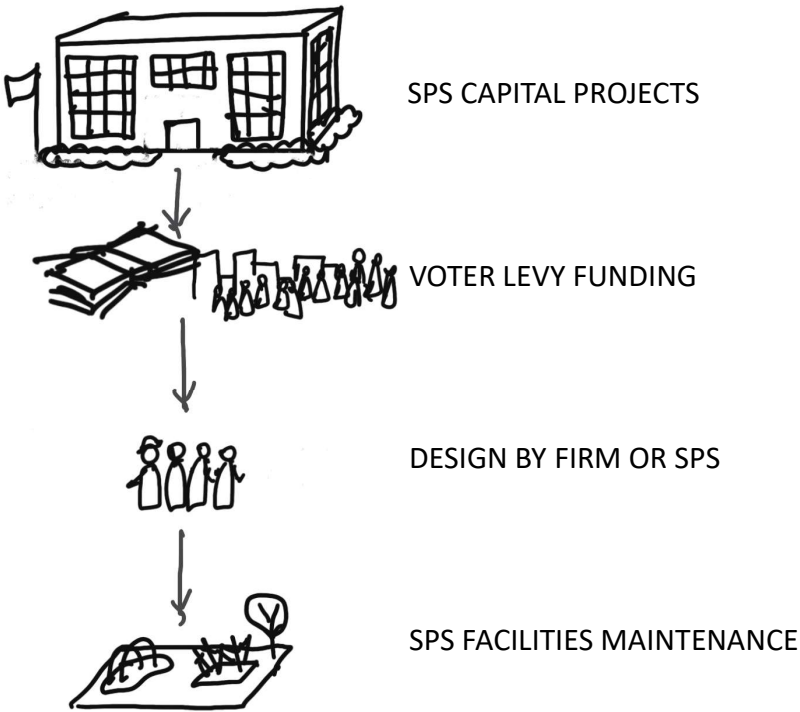


Fig. 5.3: SPS capital projects design process

will go to capital projects between 2026 and 2032 (“SPS Capital Projects and Planning”). As a result of the levy process, voter approval is a high priority for capital projects. Landscape design priorities emphasize the school’s external appearance of orderliness and care to passersby, catering to perceived voter preferences for suburban aesthetics including lawns, orderly rows of trees, and trimmed shrubs in street-facing areas (Plyler 2026). Ed specs further inform the design of capital projects-led schoolyard remodels.

The amount of community participation in the district-led schoolyard design process is variable. Large-scale capital projects incorporate limited community feedback in design processes, which are directed either by internal SPS facilities design teams or outside design firms contracted by the district. In the second example, the amount of community outreach is determined by the hired design team and varies significantly depending on the resources available and priorities and style of the outside design team. Specific community outreach efforts funded by an individual school’s Parent-Teacher Organization (PTO), may support community and student participation in design and planning for capital projects. PTO funding is directly contributed by school community members and gifted to individual schools through district-approved grants. Schools located in wealthier neighborhoods benefit from large PTO funding budgets

that can support projects that would otherwise not be possible within the SPS facilities budget (Buhain 2023). This supplemental system for school design funding is inequitable, especially when basic educational needs are not met by district budgets and must be provided by PTO fundraising at an individual school level. On the variable outcomes of individual school fundraising, Seattle parent organizer Christina Jiménez remarks, “our dollars are not going to supporting staffing, for example, but it can support copy paper – so, things that our schools need to have, but typically we wouldn’t have been able to [in the past] be in the position to offer” (Buhain 2023). Vice president of the Seattle Council PTSA Vivian van Gelder notes that “the system of individual fundraising at each school has long been broken. Among other inequalities, Seattle’s lower-income areas also have less-resourced schools because their families do not have the flexible time or disposable income to make up for budget shortfalls with school auctions or other fundraisers” (Buhain 2023). Anecdotal observations by parents, community members, and landscape architects indicate that capital project-led schoolyard design complexity is affected by the amount of PTO grant funding available to the school (Ho 2026).

VEP PROJECTS DESIGN PROCESS

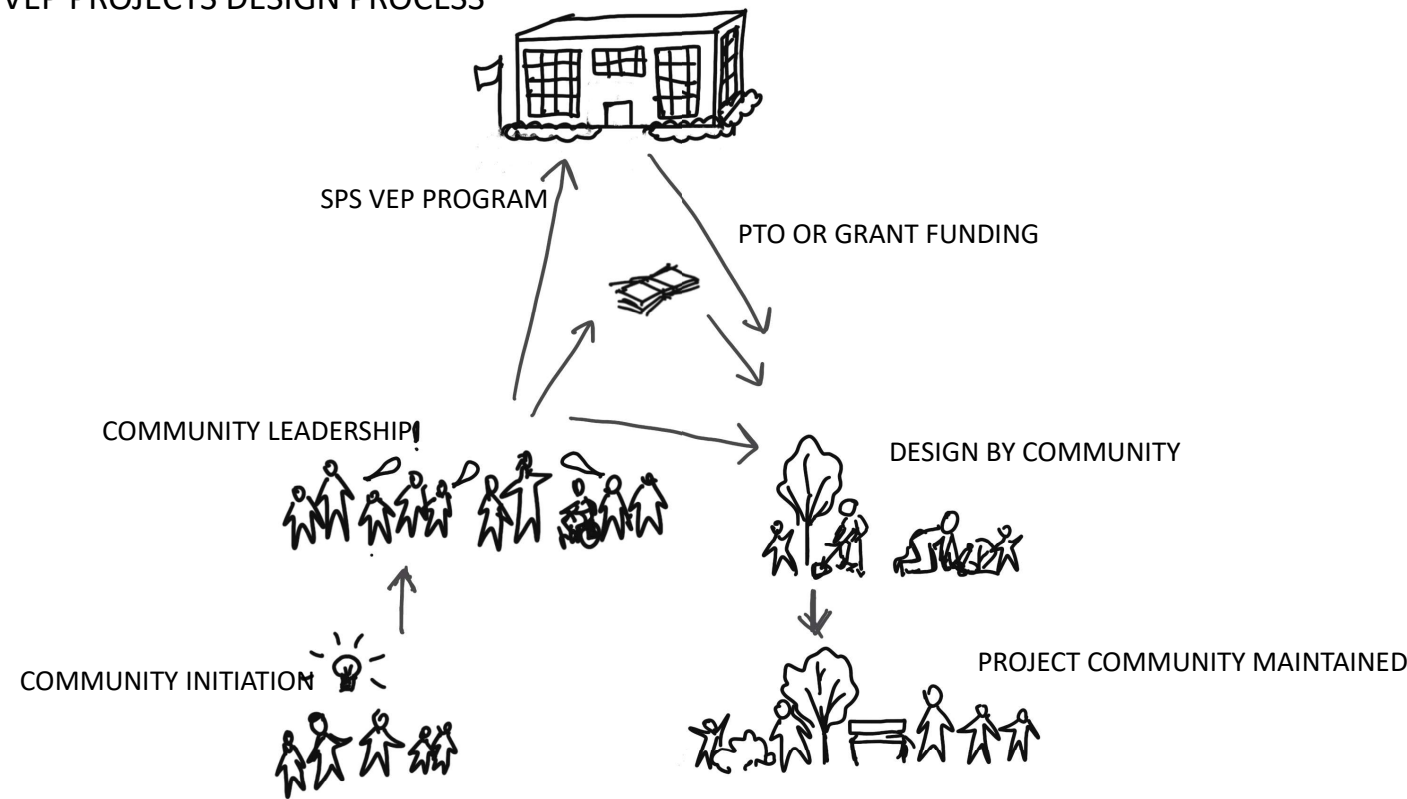


Fig. 5.4: VEP Project Design Process

Volunteer Enhancement Program

Community-led participatory design is a major feature of the Volunteer Enhancement Project (VEP) program, which supports the installation of approximately 200 projects in SPS schools annually. Managed by the SPS facilities department, the VEP program coordinates volunteer-run design projects in schools. Parents, teachers, and community members are eligible to propose VEP projects. These projects must be proposed by a volunteer, approved by the VEP review team, and funded and maintained by the volunteer in perpetuity. Elementary schools are high-turnover environments, and volunteer populations shift significantly as students and families graduate and move on. When volunteers leave, it can be difficult to maintain momentum for stewardship and maintenance, which can result in project dissolution. Volunteer Enhancement Projects vary widely in scale, ranging from relatively simple site feature installations to complex landscape designs. Examples of VEP projects include little free libraries, benches, play structures, and raised garden beds (“SPS Volunteer”). Proposals are evaluated by a district design review committee and must abide by district policies and educational specification requirements.

The VEP program coordinator can connect volunteers to funding opportunities based on their interests and goals but does not directly provide district funds. Potential funding sources include grants from the school PTO, local community organizations, the City of Seattle Department of Neighborhoods, King County, Seattle Public Utilities, and the U.S. EPA. The VEP program provides tool loans to support installation and can facilitate corporate volunteers participating in large-scale project installation (“SPS Volunteer”). Figure 5.4 illustrates the VEP project design process.

Benefits of the VEP include strong community input in design and implementation of projects. However, the opportunity for PTO funding to support schoolyard improvements results in greater funding capacity for wealthier schools’ VEP projects, which may have the resources to support more extensive design interventions and fund maintenance for projects requiring long-term stewardship (Higbee 2026). The labor burden of organization, design, implementation, and maintenance also falls on the school community, which may not have the available time or expertise for longer or more intensive design projects. The long-term success of VEP projects is limited by the community

TYPICAL SCHOOLYARD ELEMENTS AND PROCESSES

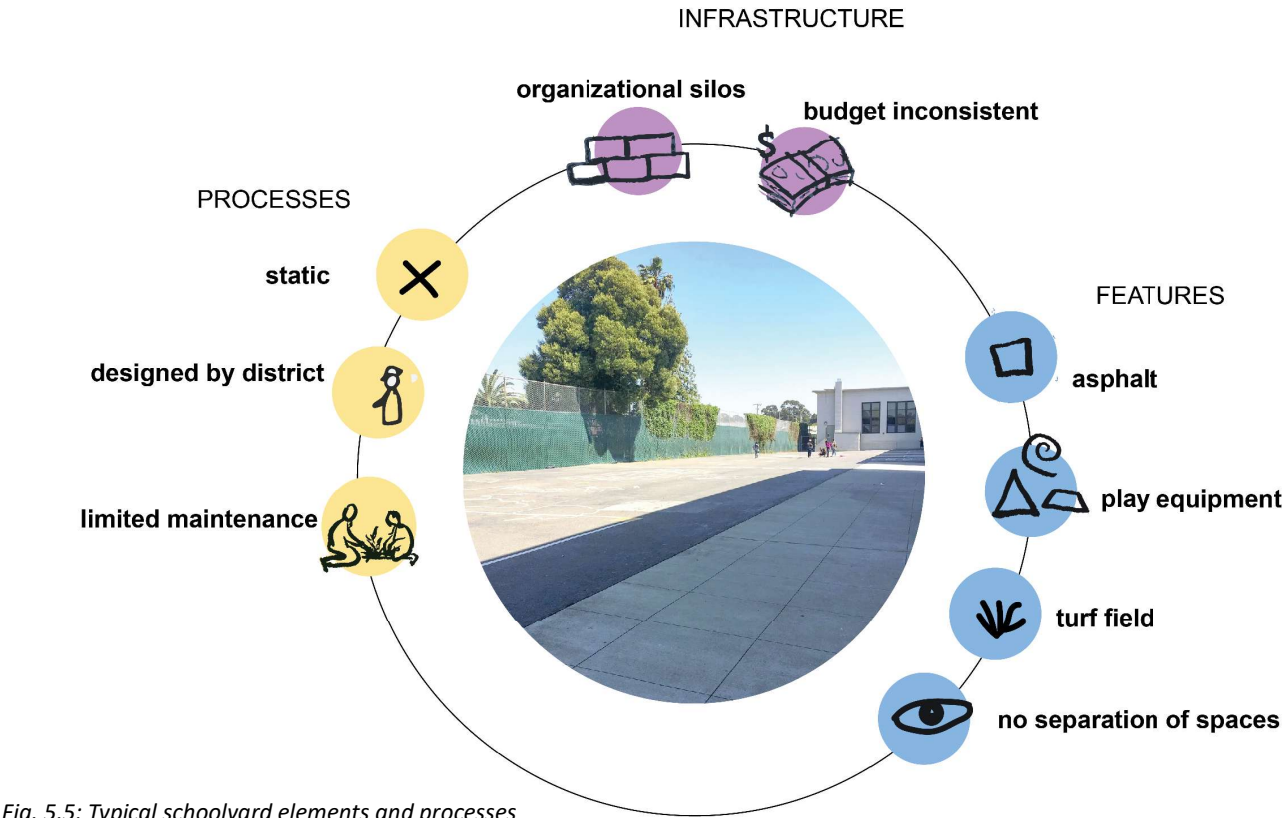


Fig. 5.5: Typical schoolyard elements and processes

capacity of the school, which is impacted by funding availability, PTO and staff turnover, and SPS leadership priorities (Weinstein 2026).

Stakeholders

In Seattle, public schoolyard stakeholders include students, families, neighbors, school staff, SPS district employees, SPS leadership, Seattle municipal government, nonprofit organizations, and voters. Figure 5.6 elaborates on stakeholders and potential motivations for adopting living schoolyards at SPS. Beyond immediate local stakeholders, state and federal policies impact schoolyard use, features, and funding (illustrated in Fig. 5.7). SPS’s liability for potentially harmful activities in schoolyards shapes a culture of risk aversion, which extends beyond SPS employees to include a general cultural avoidance of risky play (Plyler 2026). Students do not have significant influence on design or stewardship of SPS schoolyards. Some VEP processes incorporate participatory design with students, but the vast majority of Capital Projects schoolyard projects are completed with limited student engagement (Plyler

2026). Due to the voter-levy funding model that enables Capital Projects, the perceived preferences of Seattle voters have an outsized influence on schoolyard design. However, SPS largely interprets those preferences to match an aesthetic ideal of suburban curb appeal (Plyler 2026). The appearance of trees, shrubs, and manicured lawns on street-facing edges of public schools is a result of the attempt to appeal to voter approval by SPS Capital Projects. Overall benefits to students are less considered; trees, shrubs, and natural ground surfaces are perceived as risky and unkempt liabilities, which reinforces asphalt and rubber in student play areas (Plyler 2026).

STAKEHOLDERS OF SPS LIVING SCHOOLYARDS

The stakeholders of SPS schoolyards are diverse, ranging in scale from individual students and families to SPS district employees, Seattle voters, organizations, and government agencies. This chart elaborates on stakeholder motivations and potential barriers to stakeholder support for living schoolards.

Stakeholder	Motivation for Living Schoolyards	Potential Barriers
School board	- Improved student health and learning outcomes - Positive voter perception	- Limited interest in organizational capacity building - Limited interest in restructuring maintenance priorities - Limited interest in reallocating PTA funds through pooled resource model - Lack of understanding of living schoolyard benefits
Superintendent	- Improved student health and learning outcomes - Voters approve of high-quality school environments - Long-term cost savings: staff retention, less disciplinary action, potential higher enrollment, long-term stormwater fee savings, plant re-installation savings	- Limited interest in organizational capacity building - Limited interest in restructuring maintenance priorities - Limited interest in reallocating PTA funds through pooled resource model - Limited understanding of living schoolyard benefits
Facilities managers	Long-term cost savings: stormwater fee savings, building cooling savings, plant re-installation savings	- Limited understanding of living schoolyard benefits - Limited funds for staffing - Limited funds for maintenance
Maintenance staff	Reduced “mow and blow” maintenance areas (shared community stewardship model)	- Limited funding for maintenance - Limited number of staff - Limited training for complex plant care
Principals	- Improved student health and learning outcomes - Staff retention - Less disciplinary action - Positive neighborhood and community perception	- Limited understanding of living schoolyard benefits - Limited funding - Pressure from existing SPS policies and processes
Teachers	- Improved student health and learning outcomes - Calming ecological environment	- Limited by indoor-focused curriculum requirements - Limited time and resources due to lack of funding

Fig. 5.6: Stakeholders of SPS Living Schoolyards

Stakeholder	Motivation for Living Schoolyards	Potential Barriers
Students	- Engaging outdoor learning spaces - Participation in shaping schoolyard design - Calming ecological environment - Regular access to nature - Fun, creative play opportunities - Stewardship opportunities	- Limited understanding of living schoolyard benefits - Limited outdoor learning curriculum- low independent risk assessment abilities - Limited experience with stewardship oriented curriculum - Few examples of living schoolyards
Caregivers	- Improved student health and learning outcomes - Stewardship opportunities - Community building	- Limited understanding of living schoolyard benefits - Limited influence at SPS scale - Limited experience with long term stewardship
PTO	- Improved student health and learning outcomes - Stewardship opportunities - Community building	- Frequent leadership turnover - Limited funding - Difficult to coordinate long term stewardship
Community organizations	Improved student health and learning outcomes	- SPS leadership collaboration - Rigid policies and processes
National nonprofits	- Improved student health and learning outcomes - Precedents to lobby national funding and policy initiatives	- SPS leadership collaboration - Rigid policies and processes
City government	- Improved student health and learning outcomes - Improve public health - Improve equitable access to green space and environmental justice - Improve overall city environmental health	- SPS leadership collaboration - Rigid policies and processes
Seattle voters	Improved student health and learning outcomes	- Lack of knowledge of living schoolyard benefits - Lack of awareness of SPS processes
State government	- Improved student health and learning outcomes - Precedents to lobby national funding and policy initiatives - Improve overall health and environmental quality in state	- Funding - Difficult enforcement of policies without incentives and capacity building programs

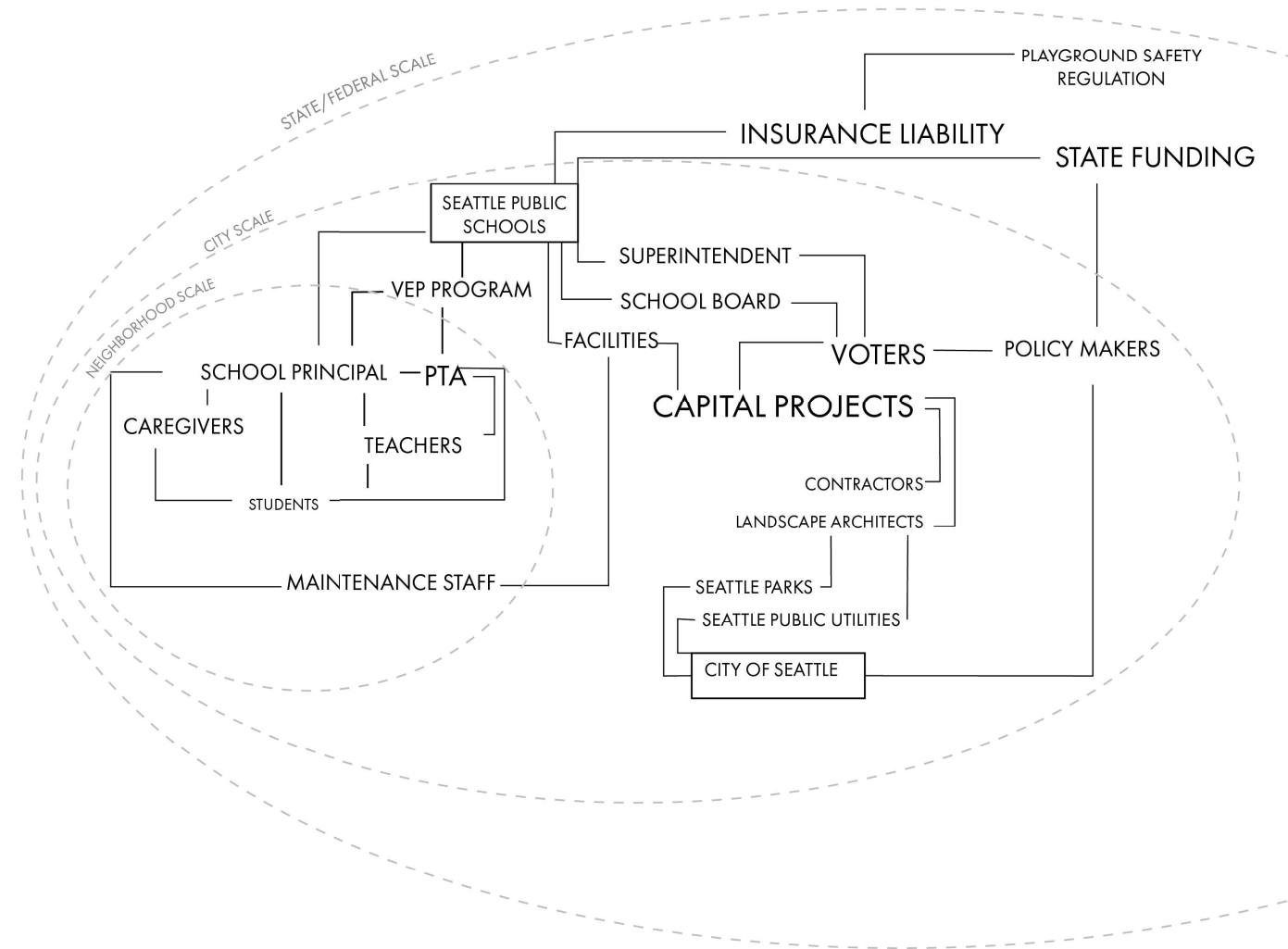


Fig. 5.7: SPS Schoolyard stakeholders and influencers

The many stakeholders and influences on schoolyard design complicate the process of changing the systems for schoolyard design and maintenance in SPS. Although SPS students are the primary users of their schoolyards, they have very little influence over the design or management of their environments while at school. Existing systems empower SPS Capital Projects, the SPS School Board, the SPS Superintendent, and perceived voter preferences while disempowering students and families. Figure 5.7 illustrates the relationships between stakeholders and influence over design outcomes. The VEP program is an opportunity for community input in schoolyard design, but the lack of SPS district funding, curricular connection, and project initiation puts the burden of creating infrastructure for participatory design processes on volunteers. The priorities that SPS reinforces with existing Capital Projects and Facilities systems include

extreme liability aversion and low up-front cost design. These priorities lead to a lack of vegetation in student areas, lack of irrigation and plant maintenance, lack of participatory design processes, and lack of motivation to remove acres of asphalt surfacing. Figure 5.8 illustrates the connections between SPS norms, impacts of those norms on schoolyard design, and the outcomes of those design choices.

Despite systems that reinforce typical schoolyard features, some SPS elementary schools have broken norms to create educationally rich and diverse play spaces in their schoolyards. The following section profiles three SPS schoolyards that exceed the limitations of typical SPS systems.

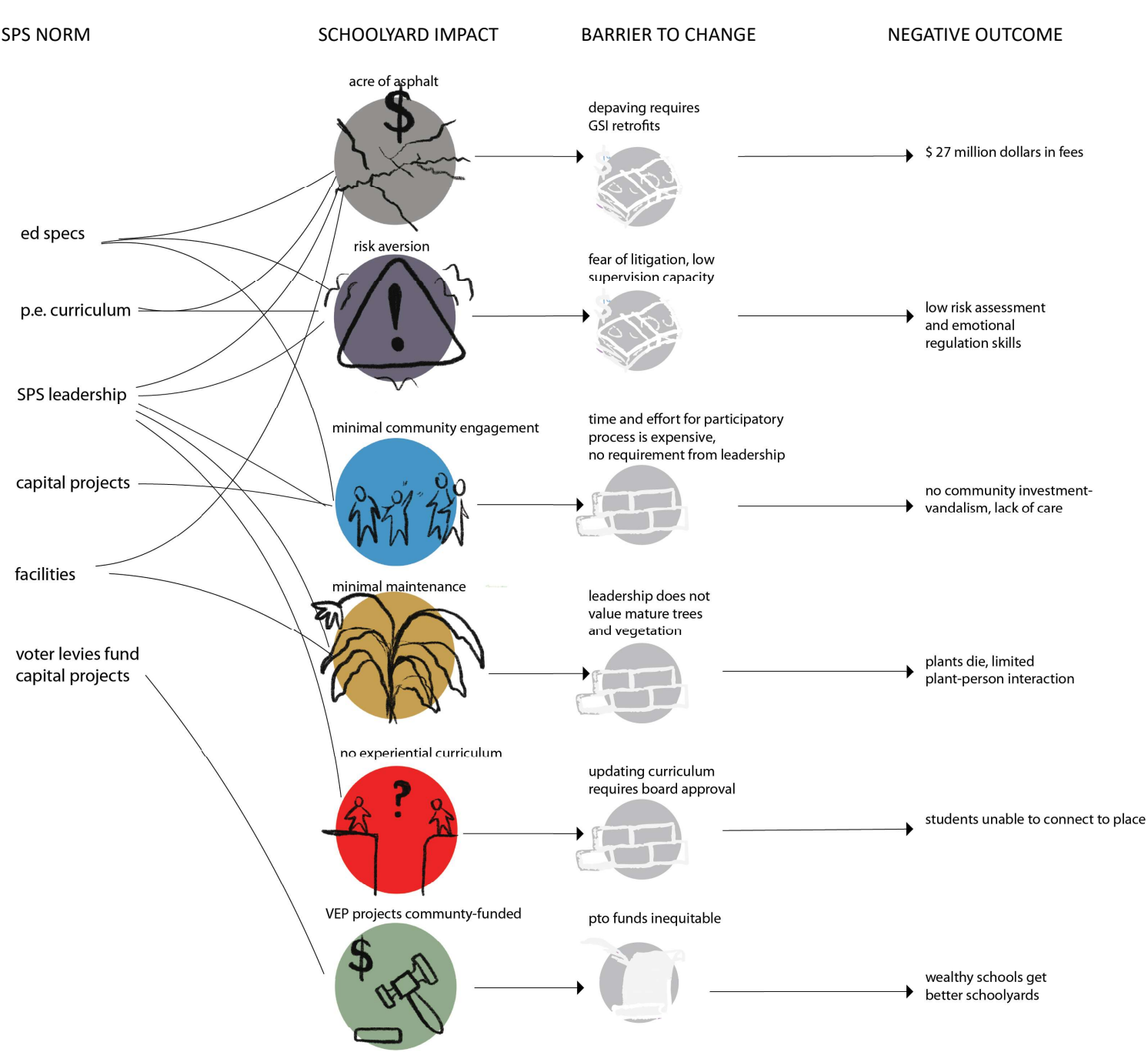


Fig.5.8: Existing SPS systems and outcomes

SPS CASE STUDIES

Despite restrictive educational specifications, risk-averse leaders, and limited funding, many individual public elementary schools have managed to design and support diverse play spaces within their schoolyards. The methods each school followed can provide insights for future district-scale living schoolyard initiatives. The following schools were selected as examples of three distinct design processes: SPS capital projects-led, VEP-led, and a hybrid VEP to capital projects collaboration. Each case study demonstrates innovative design, partnership, or processes.

PROJECT SCOPE ICONS

 Schoolyard-only retrofit

 Entire school and schoolyard remodel

PROJECT PARTNERS ICONS

 NGOs

 SPS

 City of Seattle

 Community

Concord Elementary Puma Playfield
Delridge, Seattle, WA

Project initiated: 2013
Constructed: 2025



SPS Capital Projects schoolyard retrofit



Rave Foundation,Seattle Parks Foundation, VEP program, SPS Capital Projects

Hawthorne Elementary S.T.E.A.M. playspace
Columbia City, Seattle, Washington

Project initiated: 2017
Constructed: 2019



VEP schoolyard retrofit



Seattle Dept of Neighborhoods, Hawthorne PTO, VEP program

James Baldwin Elementary
Seattle, Washington

Project initiated: 2019
Constructed: 2023



SPS Capital Projects school remodel



SPS Capital Projects

TAKEAWAYS

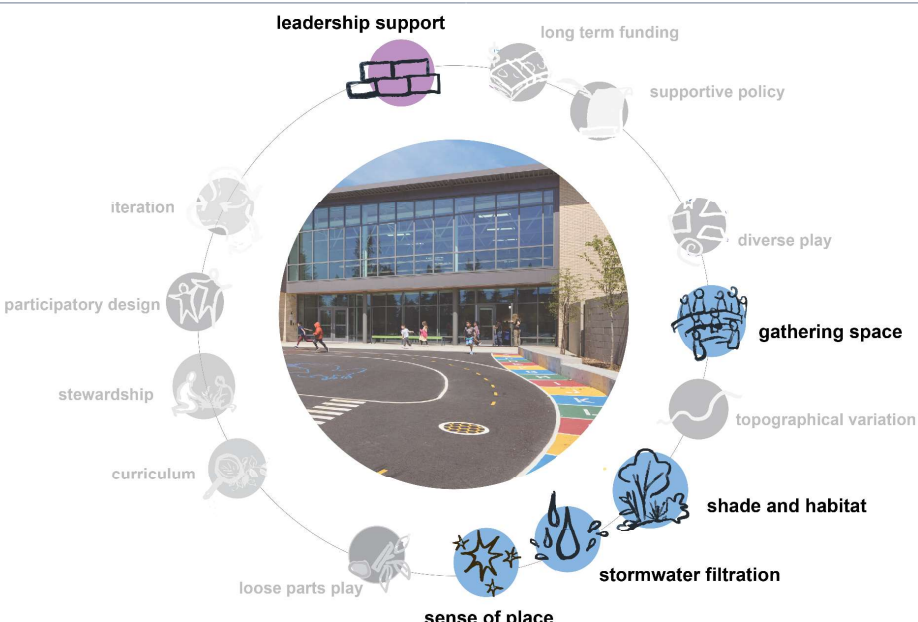
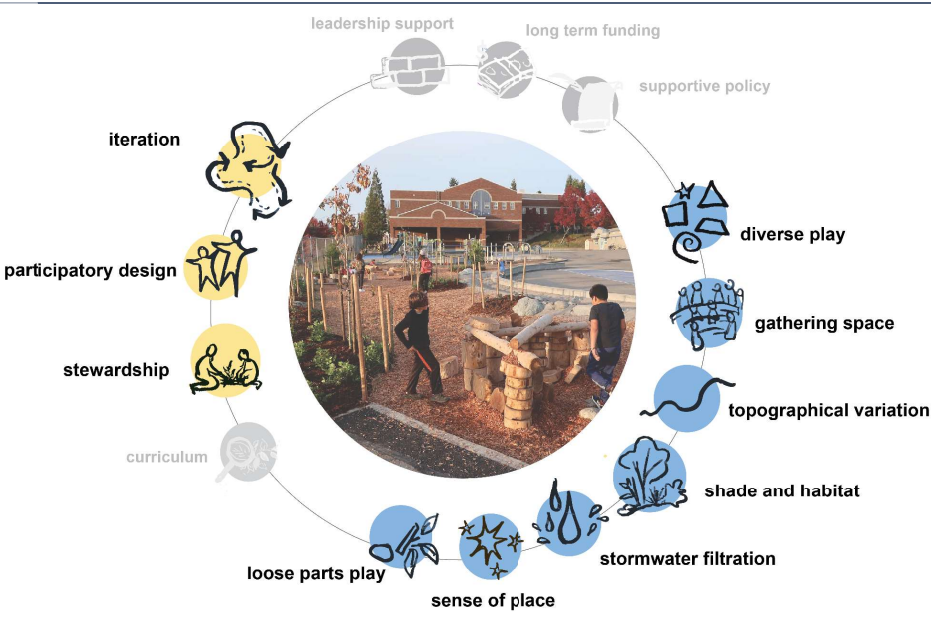
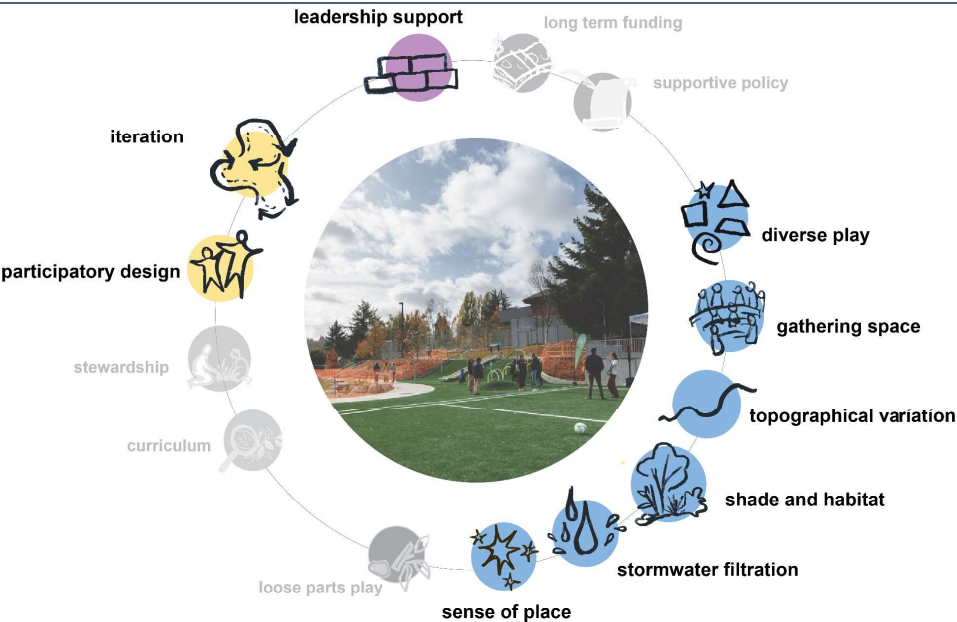
- Investment in community engagement results in strong connection to place
- Advocacy for community-designed plans by SPS employees can support levee-funded, community-designed projects
- Total project length was 12 years and required extensive advocacy by district employees and community members

TAKEAWAYS

- Community participation supports connection to landscape
- PTO and staff turnover challenge consistent stewardship and project support
- Designer advocacy can sway SPS leadership and create exceptions to limiting policy

TAKEAWAYS

- Designer values can shape project priorities to include natural elements and preserve existing vegetation
- Vines included in plan did not survive student interaction; stewardship, plant knowledge, and extraordinary plant hardiness are necessary for long term vegetation success
- “Nature areas” as nature play areas are encoded in SPS institutional norms



PUMA PLAYFIELD

Concord International Elementary School
Seattle, Washington

Initiated: 2013
Implemented: 2025



SCOPE : Partial schoolyard retrofit, Capital Projects

GOALS

- Community greenspace
- Encourage active play
- Foster sense of place



STRATEGIES

- Strong community engagement process
- VEP, NGO, and SPS Capital Projects long term collaboration
- Community-designed features support nature exploration and sense of place identity



PARTNERS

- Concord Elementary community
- SPS Capital Projects
- Rave Foundation
- Seattle Parks Foundation
- Environmental Works



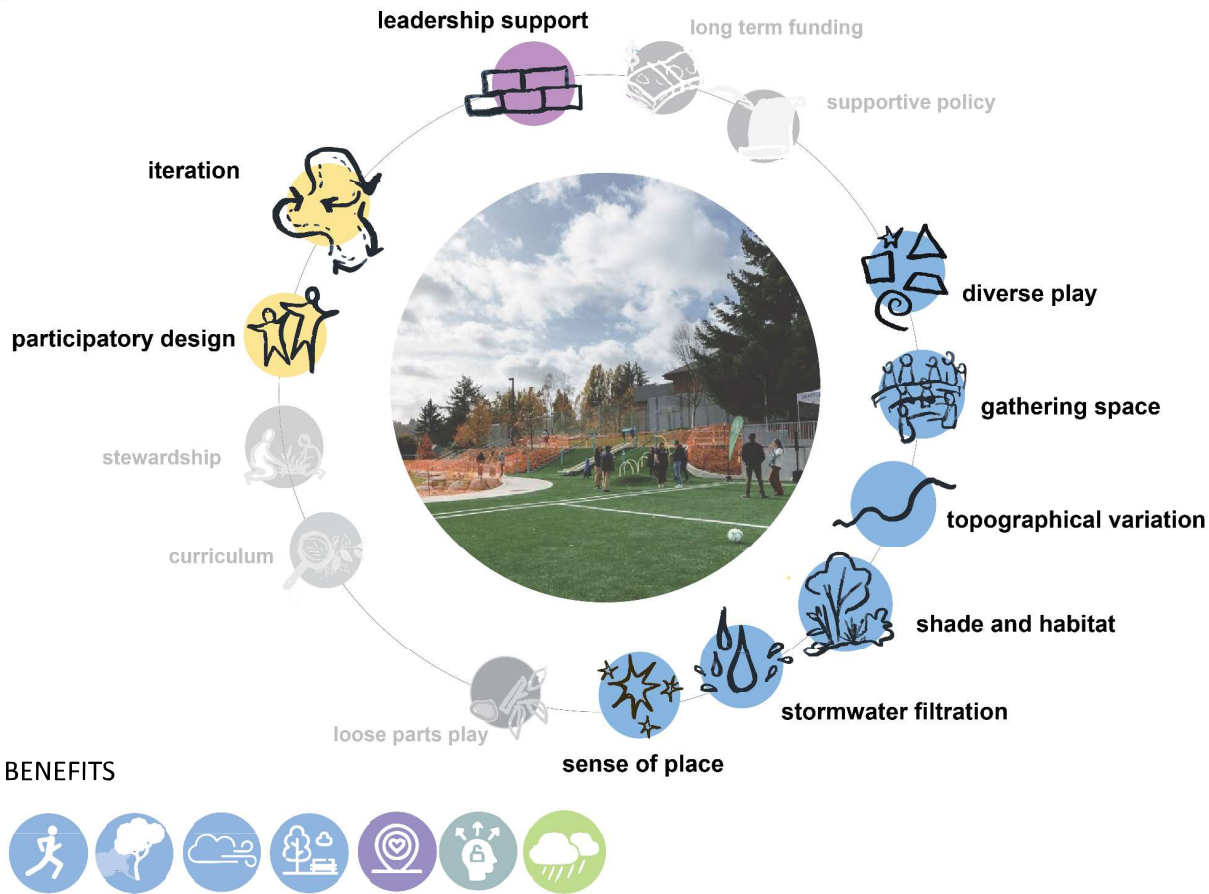
OVERVIEW

Puma Playfield is a section of the Concord International Elementary schoolyard. The redesigned area was formerly a poorly-drained natural turf field that received little use due to flooding. Community members were central to the initiation, design, and installation of the project. Puma Playfield is an exceptional example of a community-initiated and SPS-funded schoolyard. Although the process took twelve years, community members and SPS district employees achieved a rare cohesion of community vision and SPS institutional support.

TAKEAWAYS

- Investment in community engagement results in strong connection to place
- Advocacy for community-designed plans by SPS employees can support levee-funded, community-designed projects
- Total project length was 12 years and required extensive advocacy by district employees and community members

Fig. 5.10: Puma Playfield living schoolyard elements diagram



Features include a mini pitch soccer field, nature area with native plants, GSI, shade trees, paved paths around the perimeter of the playfield, play equipment that emphasizes the existing topography of the site, and mosaic art that represents Concord's sense of place and identity. The benefits of these features include physical exercise, shade and air quality improvement, community greenspace, enhanced sense of place, stormwater management, and improved focus during classroom learning.

PROCESS

The design and construction of Puma Playfield was driven by the commitment of Concord International Elementary community members. The South Park neighborhood of Seattle is known for strong community advocacy and organizing, and the the project began in 2013 with an intensive community engagement process. Students, families, and neighbors were invited to after-school engagement sessions centered around visioning and planning for the schoolyard redesign. The community engagement phase of the project was funded by a City of Seattle neighborhood matching grant and supported by the Concord PTO. Several VEP projects were completed to improve elements of the playfield, but significant problems remained. Years later, SPS capital projects department staff personally advocated for the Puma Playfield project to be included in a BEX levy. This endorsement by SPS provided the project with significant funding support and ensured that post-installation maintenance would be performed by SPS facilities staff. NGO partners supplemented funding to fulfill the community's needs and vision for their playfield. Dedicated designers, engineers, and contractors were attentive to community needs. Many members of the project team were South Park neighborhood residents and Concord parents, which further supported the creation of a high-quality, thoughtful, and community-engaged landscape.

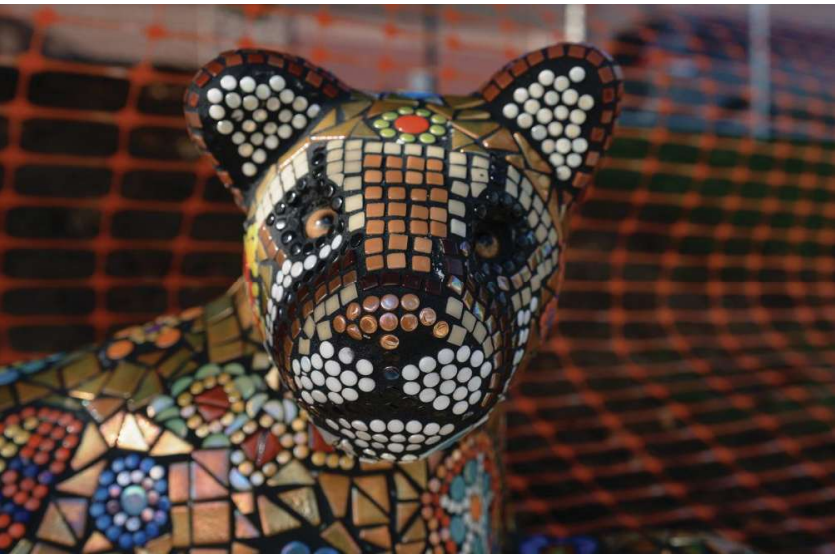


Fig. 5.11: Puma sculpture (Seattle Parks Foundation)



Fig. 5.12: Puma Playfield paths and planting areas (Seattle Parks Foundation)



Fig. 5.13: An existing hill now features a slide, climbers, and artificial turf. (Seattle Parks Foundation)

JAMES BALDWIN SCHOOLYARD

James Baldwin Elementary School
Seattle, Washington

Initiated: 2019
Implemented: 2023



Scope: School remodel, Capital Projects BEX V levy
GOALS

- Family-welcoming play space
- Foster connection to nature
- Promote sense of belonging

STRATEGIES

- Preserve existing mature trees
- Integrate engaging natural elements when possible (bark on logs, vines)
- Clear separation and borders of bioretention area allows for “messier” plantings within



PARTNERS

- SPS Capital Projects
- Fora Landscape Architects

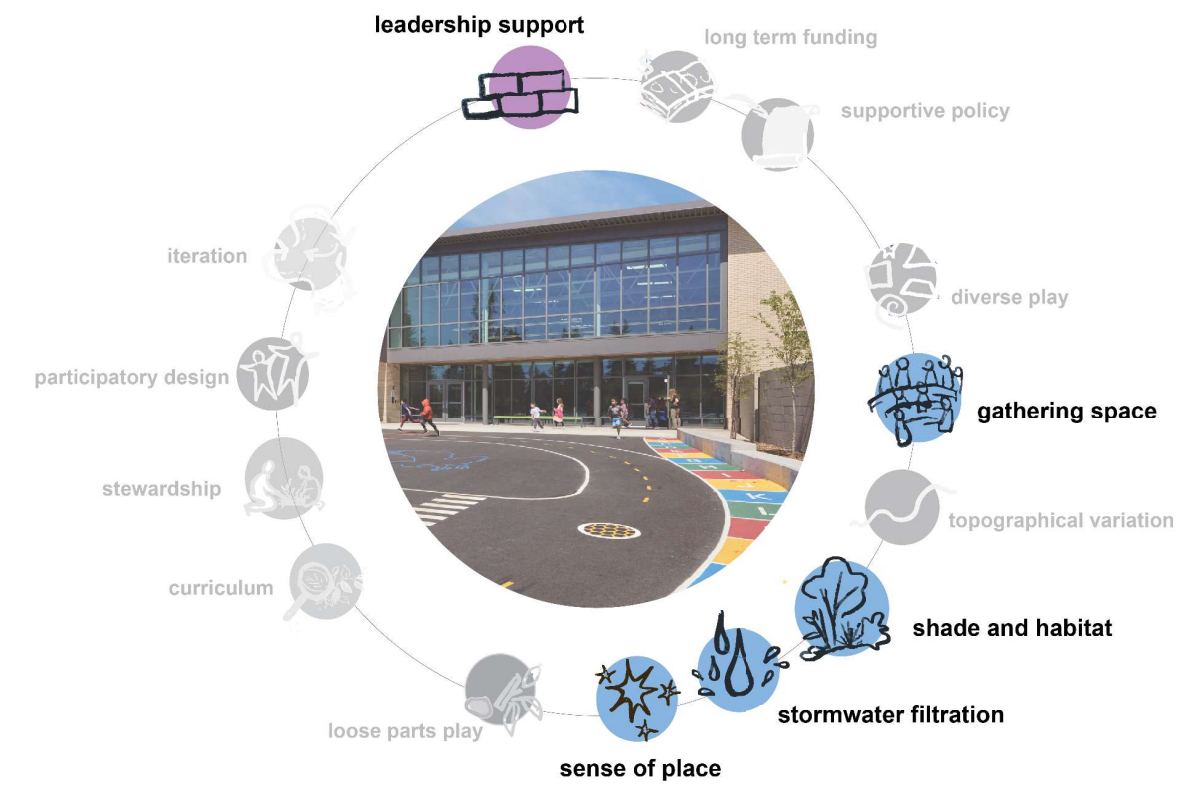
OVERVIEW

Fora Landscape Architects worked with NAC Architecture to design a renovated schoolyard for James Baldwin Elementary. The project was funded by the BEX V voter levy and contracted by SPS Capital Projects as part of a whole-school remodel. Designers integrated natural features into the schoolyard when possible, including preserved existing maple trees on the site perimeter, “nature areas” for nature play, and extensive GSI (“James Baldwin Elementary”). Community engagement was not prioritized due to SPS Capital Projects timelines, but the design team integrated perceived community needs into the final design when possible (Ho 2026).

TAKEAWAYS

- Designer values can shape project priorities to include natural elements and preserve existing vegetation
- Vines included in plan did not survive student interaction; stewardship, plant knowledge, and extraordinary plant hardiness are necessary for long term vegetation success
- “Nature areas” as nature play areas are encoded in SPS institutional norms

Fig. 5.18: James Baldwin living schoolyard elements diagram



BENEFITS



Features include a bioretention area planted with native rushes, sedges, and shrubs, as well as outdoor learning areas with stumps for exploration and gathering. Mature trees were preserved on site. The benefits of these features include physical exercise, shade and air quality improvement, community greenspace, enhanced sense of place, stormwater management, and improved focus during classroom learning (“James Baldwin Elementary”).

PROCESS

The district-initiated process followed standard Capital Projects design procedures. Fora Landscape Architects was contracted by SPS to design the remodeled schoolyard. Design did not directly or extensively engage the community. Construction was completed by contractors and maintenance is performed by SPS facilities employees (Ho 2026). (Fig. 5.18 illustrates the living schoolyard elements and features that designers were able to achieve through this project).



Fig. 5.19: Log steppers with natural bark (Fora Landscape Architects)



Fig. 5.20: Bioretention area (Fora Landscape Architects)



Fig. 5.21: James Baldwin Elementary Schoolyard (Fora Landscape Architects)

Case Studies Discussion

Through SPS case study analysis it is clear that individual SPS elementary schools have successfully integrated some features of living schoolyards into their student play areas. Designer and community advocacy for risky play, student-nature interaction, and participatory processes were key in those successful examples. The Hawthorne S.T.E.A.M. playspace successfully introduced “nature areas” in student play areas and was the first loose parts play area within SPS. However, the burdens of stewardship without SPS support and school leadership turnover make sustaining the landscape difficult. Puma Playfield represents a hybrid design process that integrates institutional support and funding with community design. This example also utilizes “nature areas” within student play areas, but does not include risky play activities. The process of design and construction for Puma Playfield was extremely long, but if SPS leaders emulate the process in the future, providing clear support for community design and district funding from project initiation may be more efficient. James Baldwin Elementary’s schoolyard represents a Capital Projects design process that also supports some living schoolyard features. Bioretention planters, “nature areas”, and logs provide students with some opportunities for plant interaction and risky play. These examples demonstrate the importance of supportive leadership, long-term stewardship funded by district or NGO partners, and integration of community participation into design.

Conclusion

The school board motion on September 18, 2020 declared,
“Seattle Public Schools aspires to respond to the most difficult education challenge of our time not through fear and status-quo thinking, but with courage and creativity, engaging with families, community and nature in co-designed solutions based in hope and connection, drawing on the strengths of our communities and families”
(Seattle School District No. 1 Board Resolution).

This motion indicates potential for SPS leadership to support living schoolyards. Existing SPS organizational processes, policies, and priorities functionally reinforce typical asphalt schoolyards. Basic requirements for developing a living schoolyard include funding for long-term adaptive landscape management, natural materials in play structures are ground surfaces, commitment to

long-term participatory design, cultivating healthy trees and shrubs within student play areas, and curriculum that engages the schoolyard. All of these requirements hinge on district leader approval of depaving, funding stewardship, funding and supporting participatory design, and valuing long-term plant health. Interviews, literature review, and case studies reveal that existing SPS priorities do not align with the basic requirements of living schoolyard implementation.

Cost drives many of the barriers to living schoolyard design. Depaving of any scale within schoolyards triggers stormwater code requirements, which are costly to install and maintain. The result of inaction on depaving is similarly costly, however: surface water management fees paid to the City of Seattle are SPS facilities’ third-largest expense, and fees directly correlate to the percentage of impervious surface on site (Brown 2026). Basic maintenance for schoolyards is limited, and irrigation for planting areas is limited to 3 years post-installation according to plant warrantee agreements (Plyler 2026, Morin 2026). General facilities maintenance is underfunded, resulting in very limited staff capacity for stewardship beyond mow and blow. If planting areas are included in student play areas, they are not legally considered to be part of student play areas. Fear of liability also limits the presence of trees, shrubs, and other natural elements like nature loose parts in student play areas (Plyler 2026). Community engagement is also limited in projects managed by the SPS Capital Projects department, resulting in designs that students do not meaningfully contribute to. Community-engaged VEP projects do fulfill the participatory design elements of living schoolyards, but VEP projects are not funded by SPS or voter levys. Community-funded and community-maintained VEP projects rely on community capacity for project funding and stewardship, which can lead to more engaging schoolyards in wealthier schools but leaves out schools without those resources.

Given the existing priorities and processes of SPS leaders, living schoolyard implementation must originate with strong leadership support for the value of living schoolyards overall. Partnerships with NGOs and government can also support increased capacity for organizational process changes. The process of change will be gradual, but implementing phased strategies may support SPS with shifting toward design systems for living schoolyards.



Fig. 5.22: Loose parts play at Hawthorne Elementary S.T.E.A.M. playspace. (Eric Higbee)

SEATTLE PUBLIC SCHOOLS REFLECTIONS

- Living schoolyards benefit student and community health, wellbeing, and learning
- At scale, living schoolyards provide urban green infrastructure that supports community resiliency and climate adaptability
- Living schoolyards must be built through processes and infrastructure that support dynamic landscape change over time while centering children’s wellbeing
- Benefits of living schoolyards increase when students are involved in ongoing participatory design
- Long term funding, leadership support, and supportive policies are foundations for successful living schoolyards



Fig. 6.0: Process work diagram of living schoolyard planting areas for View Ridge Elementary.

CHAPTER 6

STRATEGIES FOR IMPLEMENTATION

What strategies can support sustainable living schoolyard implementation for SPS ?

“The aim is to develop pedagogical practices that move beyond a purely utilitarian view of the schoolyard and see the maintenance of schoolyard nature as part of cultivating a shared living environment” (Blanc 2025)

Introduction

How can Seattle Public Schools shift to implement and sustain public living schoolyards? Systemic change requires ongoing collaboration between community members, institutional leadership, and regional governance (Sekulova 2024). Successful living schoolyards are funded with long term maintenance in mind, integrated into required educational curriculum, and engagement with community members in an iterative, participatory design. The process of systemic change has already begun: Seattle Public Schools has built some momentum toward implementing living schoolyards. The 2021 Task Force on Outdoor Learning, 2024 Outdoor Learning Strategic Plan, and the existing VEP program support some elements of living schoolyards (Barber 2024). However, the dominant existing policies, processes, and standards for schoolyard design make the creation of a dynamic, ecological schoolyards extremely difficult. Figure 6.1 illustrates the connections between the existing norms of SPS schoolyard design and potential strategies to shift processes toward living schoolyard-supportive systems.

Specific interventions have the potential to amplify one another and form interconnected networks of support for systemic change, but there is also potential for failure if momentum dies. For this reason, the strategies that I am proposing are multiscalar, phased, and connected. Building systemic redundancy reduces the risk of overall failure, supporting a resilient system moving toward incremental change. Figure 6.2 illustrates the phasing and interconnectedness of proposed strategies for SPS living schoolyards.

STRATEGIC RESPONSES TO EXISTING SPS SYSTEMS AND OUTCOMES

SPS priorities and norms reinforce typical schoolyard features. This diagram illustrates the norms, impacts, barriers, and outcomes of the existing SPS priorities, and counters those barriers with possible strategies for systemic change.

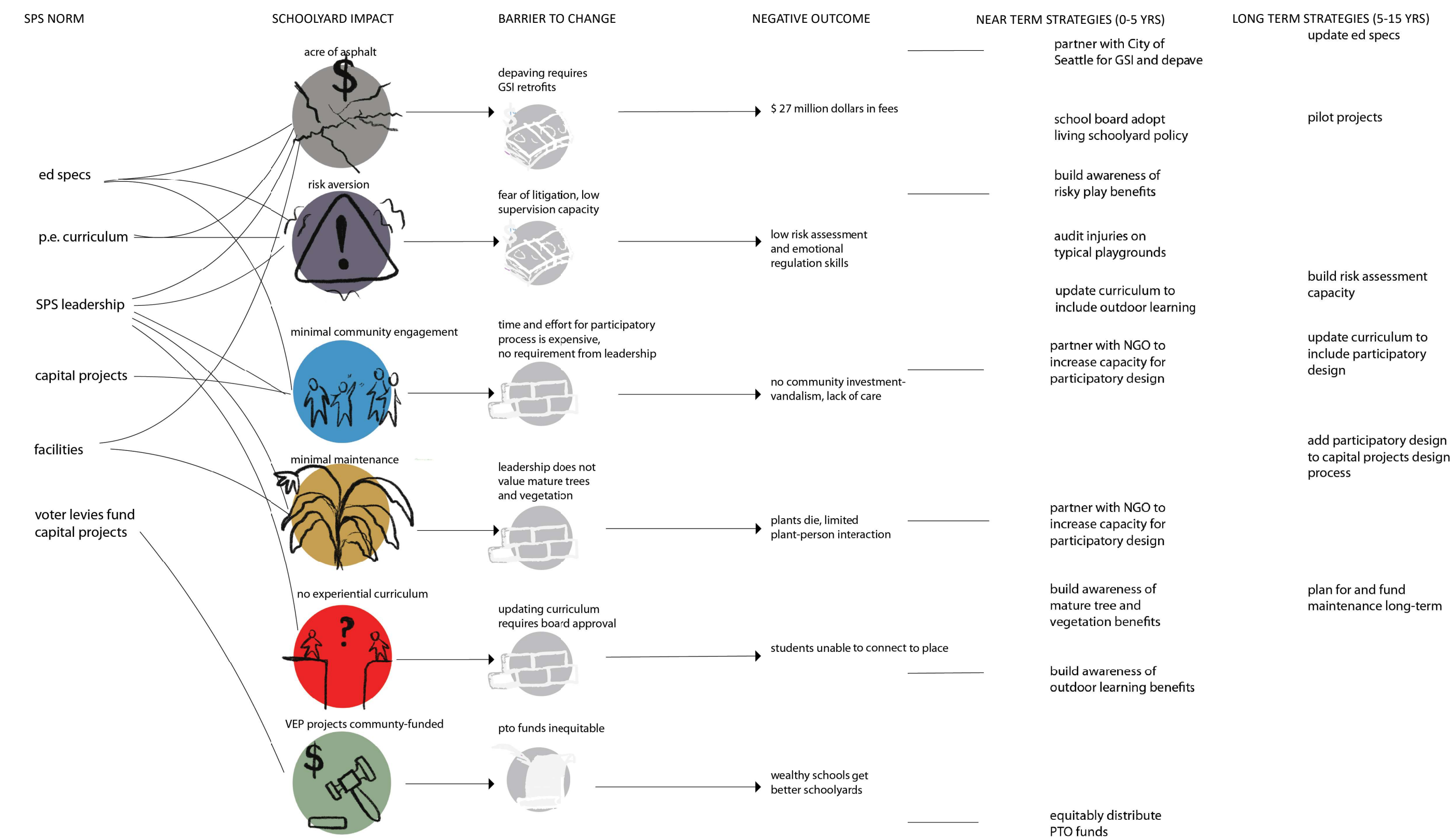


Fig. 6.1: Strategic responses to SPS norms

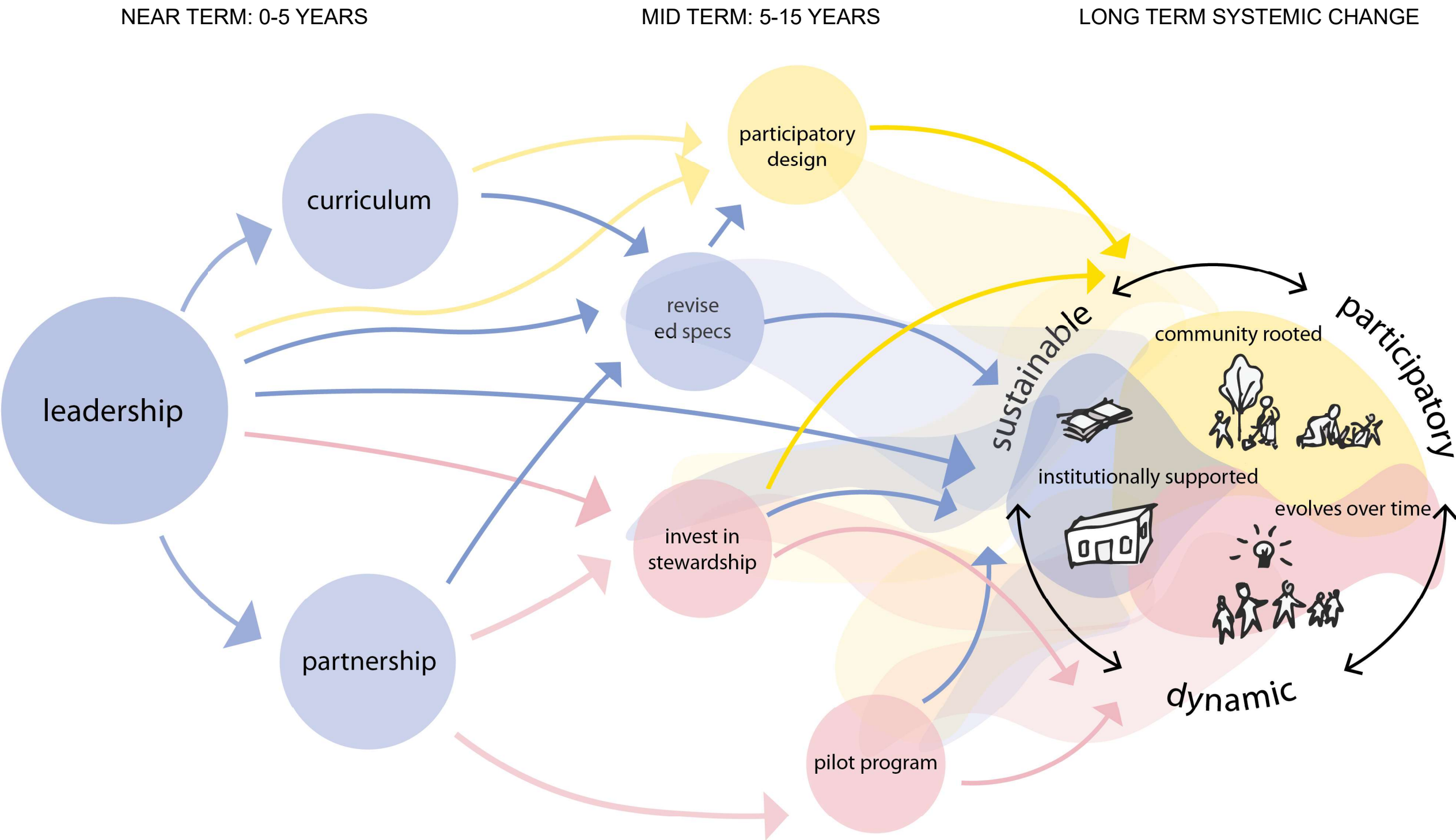


Fig. 6.2: Phased strategies for SPS diagram

Near Term Strategies (0-5 years)

The initial phase intervenes at both district and school neighborhood scales to establish the value of participatory design and learning within the schoolyard landscape. At this stage, organizational priorities and practices shift to build capacity for sustaining dynamic landscapes. Landscape features may remain static, but schoolyard use extends to curricular activities.

Goals:

- Build awareness of living schoolyard benefits and features
- Bring students outside through curriculum- engage existing greenspaces and assets
- Establish stable funding sources
- Build capacity for long-term landscape stewardship
- Begin process of depaving and installing GSI

Curriculum

Strategy: District adopts outdoor curriculum for K-5 students

Who can be involved?

- community advocacy, PTA
- voters
- nonprofit partners
- district leadership



Building curiosity, connection, and participation in any subject begins with curriculum design. The existing SPS curriculum does not engage students with outdoor spaces, limiting interactions with the schoolyard beyond recess time. Adopting a curriculum that requires place-based learning outdoors will create opportunities for spending meaningful time in schoolyards, which will amplify place-connection and students’ sense of agency (Zhang 2022). Although full living schoolyard construction is not possible immediately, participatory design processes around other aspects of the schoolyard environment are possible. Including students in the process of changing school environments is inherently curricular; when students are meaningfully engaged in design, they benefit emotionally and educationally (Zhang 2022).

Board Policy

Strategy: Superintendent and school board adopt living schoolyard policy

Who can be involved?

- community advocacy, PTA
- designer advocacy and support
- nonprofit partnerships
- district leadership



Successful living schoolyard implementation requires strong support from leadership. Organizational change derives from the school board and superintendent, who have the power to shape priorities and requirements for district processes. The Board Policy on Outdoor Learning (2020) is a strong precedent for a more specific policy that supports living schoolyard design, installation, and stewardship in Seattle Public Schools. Equity must be a central guiding principle in this policy. Prioritizing environmental justice and equitable resource distribution in living schoolyard development will support a broader student and community health in the long term.

Partnerships

Strategy: District partners with King County for depaving and GSI installation

Who can be involved?

- community advocacy, PTA
- King County
- Seattle Public Utilities
- nonprofit partnerships
- district leadership



Surface stormwater management fees are an increasing expense for SPS facilities. Depaving provides multiple benefits: reduced surface water management fees, reduced urban heat island effect, and increased potential planting areas. Building a partnership with King County Utilities could potentially lead to subsidized or waived green stormwater infrastructure installation and depaving. The Milwaukee Green and Healthy Schools program provides an excellent framework for this type of partnership.

A relevant local precedent is RainWise, an organization that supports green stormwater infrastructure (GSI) implementation for homeowners throughout Seattle. The program offers homeowner rebates and supports larger institutions with stormwater management projects. RainWise has worked with Seattle Public Schools and the Volunteer Enhancement Project program to install several small rain gardens and a cistern, though no large-scale depaving projects have developed from this partnership (Barber 2024).

Rain City Partnerships is a Seattle Public Utilities organization that supports eligible privately-owned commercial properties with GSI implementation. SPS parcels are public, disqualifying them from eligibility. (“About Rain City”) However, Seattle Public Schools noted that RainCity could potentially be a partner in the future (Barber 2024).

Strategy: District partners with large nonprofit organizations

Who can be involved?

- nonprofit organizations
- district leadership



Non-Governmental Organization (NGO) support can provide SPS with expertise, capacity, and funding for implementing living schoolyards. Trust for Public Land and similar large organizations have established processes that support participatory design, ongoing landscape stewardship, and long-term strategic guidance. Collaborating with NGO partners can provide momentum for change that may otherwise stagnate as district leadership changes over time. As OUSD demonstrates, partnership with NGOs facilitates the development of living schoolyard construction guidelines, policy supports, and maintenance planning.

Mid-Term Strategies (5-15 years)

This phase builds structures for sustaining long-term systemic change. Department norms and processes have changed to accommodate living schoolyard values.

Goals:

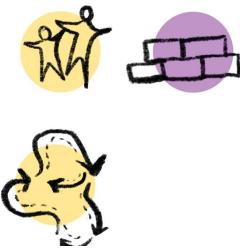
- Capital projects design process incorporates community participation and iteration
- Education specifications reflect living schoolyard principles
- District maintenance and community stewardship collaboration
- Funding supports dynamic design, maintenance, staffing, and teacher training
- PTO funds are distributed equitably between schools
- Community perception of risk v. hazard evolves
- Launch living schoolyard pilot program
- Depave and install GSI with help of partnerships with NGOs and govt (building on partnerships)

Design Process

Strategy: Initiate a pilot program for living schoolyard retrofits (5-10 schools)

Who can be involved?

- community advocacy, PTO
- designer advocacy and support
- nonprofit partnerships
- district leadership



Launch a proof of concept study with a small group of elementary schools. Schools might be selected by environmental justice equity index mapping and interest in the ongoing process of stewardship of a living schoolyard. Selection criteria may be modeled from the Milwaukee Green and Healthy Schools program, which adopts a cohort model to incrementally retrofit public schoolyards. The pilot study will include participatory design processes, funding for long term maintenance, and diverse environmental and play features of living schoolyards. See appendix for more specific living schoolyard features.

Strategy: District restructures SPS capital projects design processes to include iterative participatory design practices.

Who can be involved?

- District facilities and resource conservation staff
- community advocacy, PTO
- Voters
- designer advocacy and support
- nonprofit partnerships
- district leadership

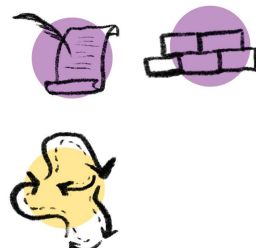


Student participation in designing their environments leads to positive emotional and learning outcomes. (Sekulova 2024) Supporting community design practices in capital projects would be educationally enriching and support a sense of place, belonging, and respect for the built environment. This practice could lead to improved trust between communities and district leaders, which would further support student learning and wellbeing. Building on curriculum connection to schoolyards established in the first phase, participatory design is included in interdisciplinary SPS curriculum.

Strategy: Revise education specifications to include living schoolyard features and values.

Who can be involved?

- district leadership
- community advocacy, PTA
- designer advocacy and support
- nonprofit partners

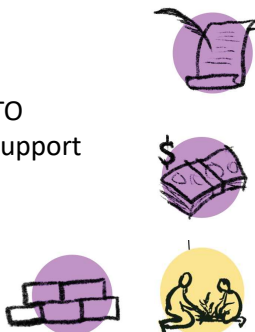


The existing education specifications require schoolyards to consist of 1 acre of hard surface play, 3000 sf of hard surface covered play, and a play structure. The omission of vegetation, topography, and creative play features severely limits schoolyard design. This is an opportunity to directly include living schoolyard values and features in required construction specifications. Revised education specifications might emulate the Oakland Unified School District Living Schoolyard Guidelines, which provide examples of district-approved features that reduce overall paving and significantly increase vegetation and play feature diversity. This strategy may also include requirements for depaving and installing green stormwater infrastructure in schoolyards. For an example of potential Seattle Public Schools Living Schoolyard Guidelines, see Appendix (page 137).

Strategy: Incorporate long-term maintenance and stewardship planning into funding for living schoolyards

Who can be involved?

- community advocacy, PTO
- designer advocacy and support
- nonprofit partnerships
- district leadership



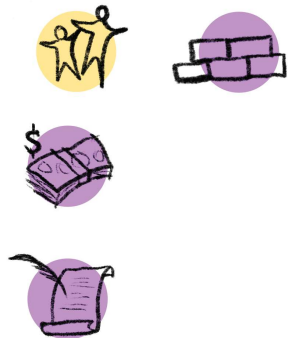
Funding for maintenance is an ongoing problem for Seattle Public Schools facilities. Prioritizing maintenance funds as essential to living schoolyard success becomes possible with organizational priority shifts and capacity building. Long term funding might be sourced from partnerships with municipal and nonprofit organizations (established in the first phase) or from restructured priorities within voter-approved levies and the overall district budget.

Equity

Strategy: PTA funds are pooled and equitably distributed among Seattle Public Schools.

Who can be involved?

- district leadership
- community advocacy, PTO
- Voters



Existing SPS practices allow individual school PTOs to self-fund schoolyard improvements. This practice supports schools in wealthy areas and harms schools with smaller PTA budgets. If Volunteer Enhancement Projects continue to allow PTO funding sources, that funding should be equitably distributed between all schools. NGO and municipal partnerships may support more equitable funding of living schoolyards long-term, but PTO pooling is a more immediate source of equitable resource distribution that would immediately benefit students and communities.

Long-Term Strategies (15 years+)

This phase assumes the process of sustaining dynamic schoolyards will be iterative. Organizational processes will be assessed, adjusted, and continually respond to the needs of students and communities. Figure 6.3 illustrates the goal of these shifts: dynamic living schoolyard systems that engage community and institutional support. Community knowledge of stewardship and the value of dynamic outdoor learning spaces will grow in relation to the investment in scaling the installation of living schoolyards to all elementary schools and K-8 schools in the district. District policy will continue to support long-term funding of maintenance and design. The previous strategies employed in immediate and intermediate intervention phases will naturally evolve to reflect student needs, but the core values of those strategies will remain. Ongoing research will support evolving best practices. Open-endedness, adaptability, and stewardship become norms for schoolyard landscape design. Intergenerational awareness of living schoolyards may build support for shifting cultural norms around environment and landscape processes. Due to the speculative nature of long term visioning, I will not propose specific strategies here, but the following goals reflect the potential success of the strategies proposed in previous phases.

- Goals:
- Living schoolyard pilot program expands to all Seattle elementary schools
 - Living schoolyard design is ongoing- stewardship and adaptation become design
 - Monitoring and evaluation supports evolving strategies for long-term success
 - General knowledge of value of nature-based play
 - Funding continues to support dynamic design, maintenance, staffing, and teacher training
 - Community supports risky play and provides education for risk assessment at home and school
 - Knowledge sharing supports adaptive management of landscapes
 - Research on learning, emotional, ecological, and economic benefits of living schoolyards inform future iterations and best practices

DYNAMIC LIVING SCHOOLYARDS SYSTEM

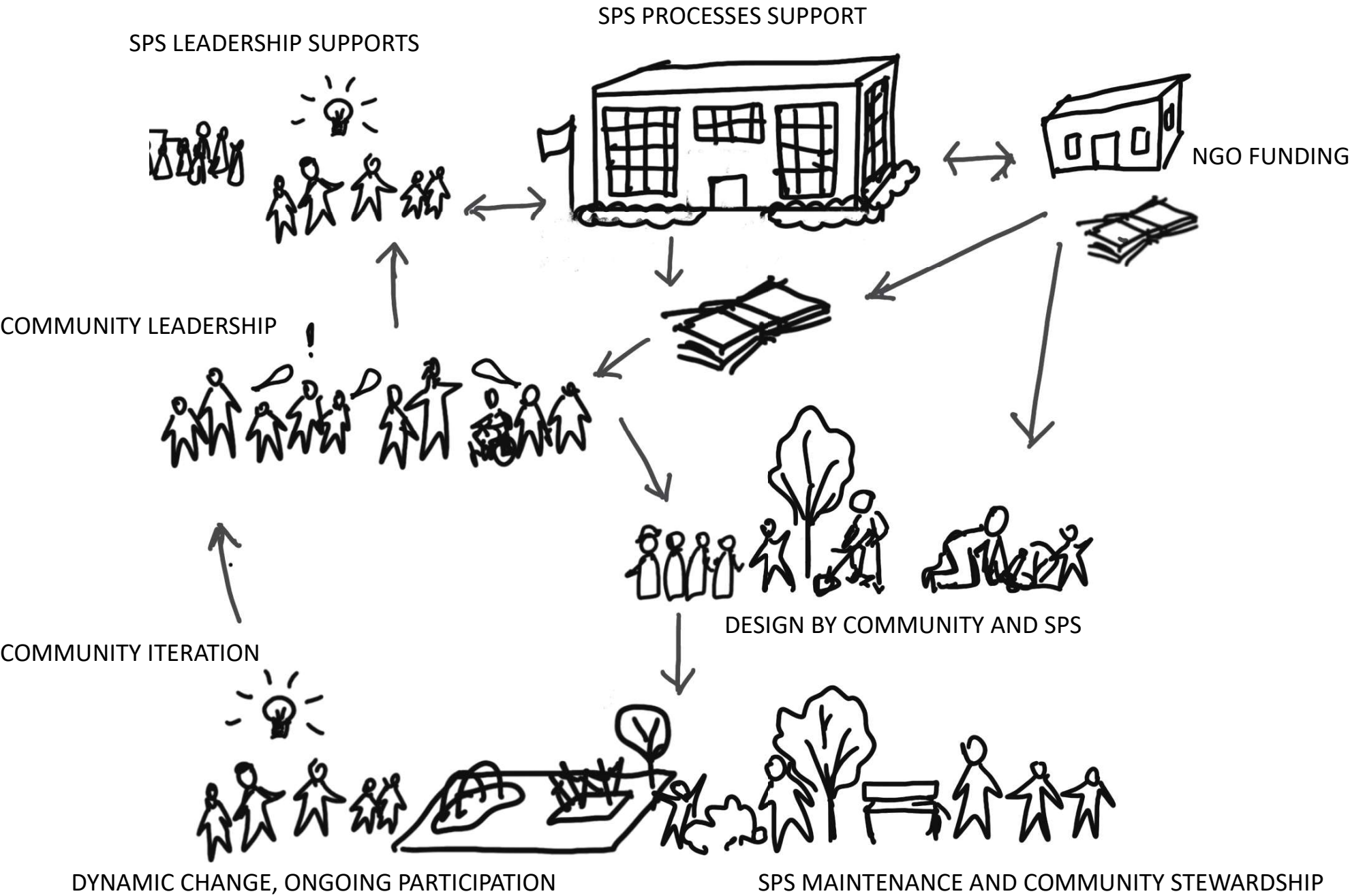


Fig. 6.3: Dynamic living schoolyard systems of design, stewardship, and governance



Fig. 6.4: OASIS schoolyard courtyard forest (CAUE 75)

Conclusion

Establishing policy, processes, and design specifications to support the implementation of living schoolyards will require strategic change at community, district, and city scales. Bureaucratic systems change slowly, but the precedents set by similar districts prove that living schoolyard implementation is possible. Living schoolyards provide many compelling benefits, and sharing those benefits widely among school communities may be an important place for designers, teachers, and community members to begin advocacy work together. Curriculum, leadership support, and sustainable partnership between governance and communities will be essential to successful systemic change.

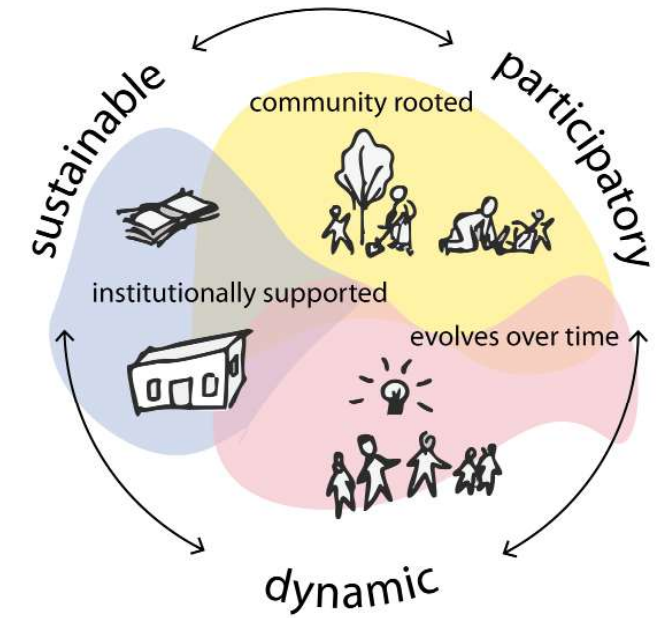


Fig. 6.5: Long term goal: systemic integration of living schoolyard values into SPS processes

STRATEGIES REFLECTIONS

- Leadership support is the foundation of successful strategic implementation
- Curriculum should support students' sense of place, understanding of their environments, and integrate participatory design practices
- Policy can initiate organizational priority shifts
- All strategies connect; one strategy alone will not accomplish systemic change, but building capacity over time can support multiple strategies.

CHAPTER 7

SPECULATIVE DESIGN PROPOSAL

APPLIED STRATEGIES

How might living schoolyard strategies impact the processes and features of an existing site?

*“Involving children as decision-makers in the design and management of their everyday settings can also be interpreted as a process of developing an identity through acts of giving a meaning to a place (Rigolon, 2011). For this reason, the process of greening educational environments should entail leaving a part of the canvas incomplete, with unfinished, or flexible spaces and elements that children and young adults continuously interact with and interpret (Rigolon, 2011).”
(Sekulova 2024)*

Introduction

What could a living schoolyard look like within the context of SPS? In this chapter, I apply the implementation strategies detailed in the previous chapter to an existing school site. This is a speculative demonstration of the ways that living schoolyard implementation phases might manifest spatially. Student participation in design is a fundamental element of living schoolyards, which I was not able to accomplish for this thesis. In the absence of student involvement, the following design includes open-ended features that could scaffold impromptu student interaction and design. This exercise demonstrates possible iterations of initial and long term phases of living schoolyard implementation through plan, section, and perspective drawings.

Design Goals

This speculative exercise engages with the challenges of a specific SPS schoolyard, but the overall goals for schoolyard design are broadly applicable to all SPS elementary schools. Building interest and momentum within the school community and increasing SPS leadership’s tolerance for engaging with dynamic change in schoolyards is a primary goal in the first design phase. Meaningful student contribution to the features, functions, and processes of the schoolyard is another motivating force. The sustainability of systemic change is also considered in this design. Although the near-term design highlights impermanent features, the design assumes that the processes that drive those features are solidly integrated into institutional practices, supporting longevity. Limited funding and limited maintenance capacity influences both phases of the proposal, which assumes NGO funding support for the later phase. With these considerations, this exercise fundamentally explores the ways in which processes and features can align to provide the benefits of living schoolyards on an SPS site.

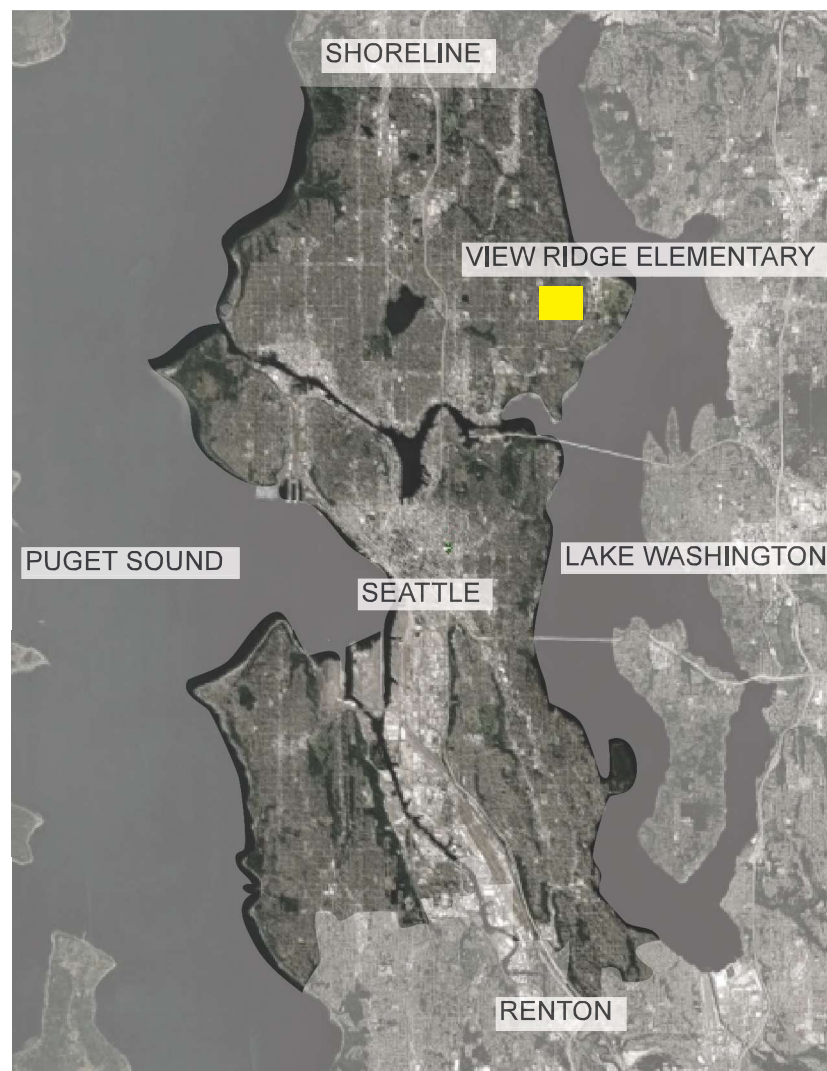


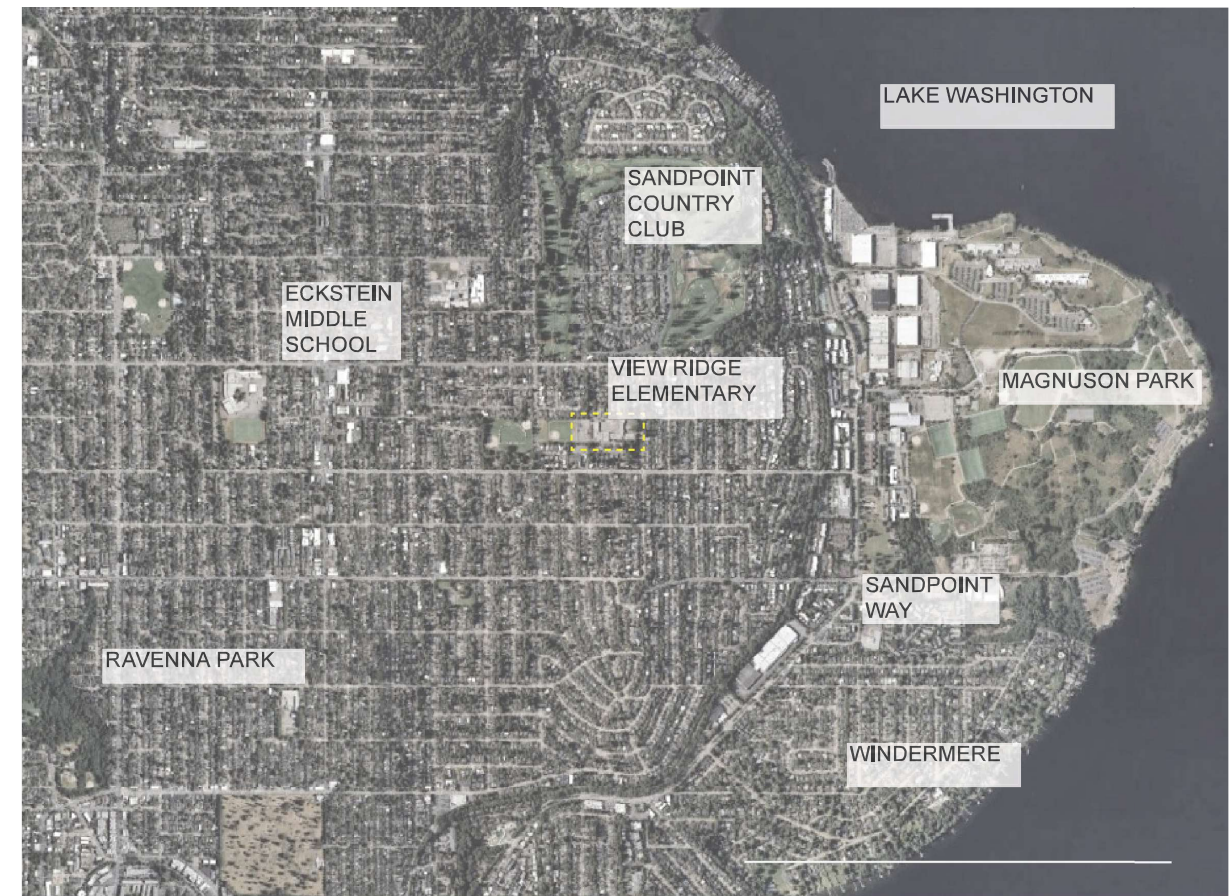
Fig 7.1: View Ridge Elementary location in Seattle

View Ridge Elementary Context

For this exercise, I will design the upper-grade playground area of the schoolyard of View Ridge Elementary, my childhood elementary school and the school that my nephew currently attends. My personal experience provides me with a nuanced understanding of the site and community, which in this circumstance acts as a proxy for true community design.

View Ridge Elementary School is located in a wealthy neighborhood in northeast Seattle. The school sits at the top of a glacially sculpted hill, overlooking the Cascade mountain range to the east and the Olympic mountain range to the west (Figure 7.1, Figure 7.2). Site features include a 1947 single-story brick building, three large and distinct asphalt-paved play areas with one play structure each, several garden beds, a large grass field, a side yard with shade trees, and a formal

front lawn (Figure 7.3). Of these spaces, children are only allowed access to the asphalt-paved play areas during recess, and rarely spend time in the garden or field. A protestant church neighbors the school to the south and View Ridge Park, a large park and playfield, is across one quiet street to the west. The surrounding neighborhood consists of single-family homes.



NEIGHBORHOOD CONTEXT

Fig 7.2: View Ridge Elementary neighborhood context



IMMEDIATE SITE CONTEXT

Fig 7.3: View Ridge Elementary street context

VIEW RIDGE ELEMENTARY SCHOOL PLAY AREA SITE INVENTORY



Fig 7.4: View Ridge Elementary site inventory

NOTABLE SITE FEATURES

UPPER GRADE PLAYGROUND (GRADES 3-5)

- Play equipment is limited to web climber, slide, and bars
- Large paved area used for basketball, four square, unspecified other hard surface games
- Area with woodchips and boulders
- 5' slope separates grade from school building
- Grassy slope supports volunteer cottonwood tree
- Grassy area between slope and building is not accessible to students

LOWER GRADE PLAYGROUND (GRADES K-2)

- Play equipment includes slide, web climber, bridges, plastic cubes, and bars
- Large paved area used for four square, P.E. curriculum
- Play equipment surface is woodchips contained by 1.5' cement retaining wall (blue outline in image)
- Limited shade
- 15' laurel hedge protrudes through fence on north side to provide nature interaction (leaves as loose parts)
- Two covered play areas are paved and integrated into building

LOWER SCHOOL PLAYGROUND ASPHALT AREA



Fig 7.5: Lower grade playground looking toward covered area and asphalt area.

UPPER SCHOOL PLAYGROUND SLOPE AND ROCK AREA



Fig 7.6: Upper grade playground looking from top of slope area toward volunteer cottonwood tree and rocks.

UPPER GRADE PLAYGROUND
SITE ANALYSIS

The existing spaces accessible to students are overwhelmingly paved and exposed to sun. Very few trees or shrubs are within the chain-link play area boundaries. For this exercise, I will focus on designing the upper grade playground, which is located on the west side of the school. Fig. 7.7 illustrates the features and spatial context of the site. This play area is the only area with student-accessible grass, topography, and trees (4 total, small, deciduous). A stand of douglas fir trees planted outside of the play area to the south provide moderate shade at times, and garden beds are located nearby (inaccessible at recess).

CHALLENGES:

- Sun exposure
- Compacted soil
- Mostly paved surfaces
- High disturbance environment

OPPORTUNITIES:

- Conifer stand provides shade from south
- Existing hill is unique, play opportunity, depaved, existing vegetation
- Cottonwood shows water collection point, could be rain garden or swale
- Quiet area can expand and offer creative quiet play, refuge, gathering



Fig 7.7: Upper grade playground site analysis

A. ASPHALT DOMINANT

- sun and wind exposure
- stormwater runoff
- hard surface games only

B. STEEP SLOPE

- 5 foot slope forms ridge along southeast side of playground
- play potential
- opportunity for prospect

C. EXISTING VEGETATION

- below steep slope- wet area
- plants are trampled
- cottonwood tree volunteer
- sparse lawn grass, bald soil

D. EXISTING TREES

- located off school grounds
- dense stand of mature conifers provides year round shade

E. QUIET AREA

- tables on asphalt
- underutilized
- shaded by existing trees off of school grounds

F. GARDEN

- raised beds and woodchips
- underutilized
- shaded, on upper level



OVERALL DESIGN GOALS

- Integrate living schoolyard benefits into design features and processes
- Maximize shade and permeable surfaces
- Support plant survival by selecting ruderal and stress-tolerant native species
- Increase play diversity (nature play, creative play, loose parts play, structured active play, hard surface play, and quiet spaces)
- Improve site accessibility

BENEFIT GOALS

As the design phases progress from near term to long term, the landscape will provide increasing benefits for student health and wellbeing, environmental health, and community cohesion. The following benefits represent the landscape performance goals for the far term landscape design, though the near term landscape begins to achieve several benefits as curriculum and participatory design are instated.

SELECT FEATURES AND BENEFIT GOALS

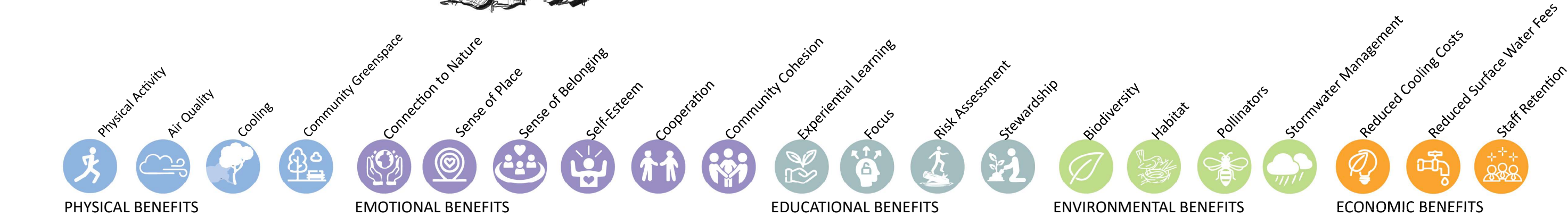


Fig 7.8: Goals for View Ridge Elementary living schoolyard benefits

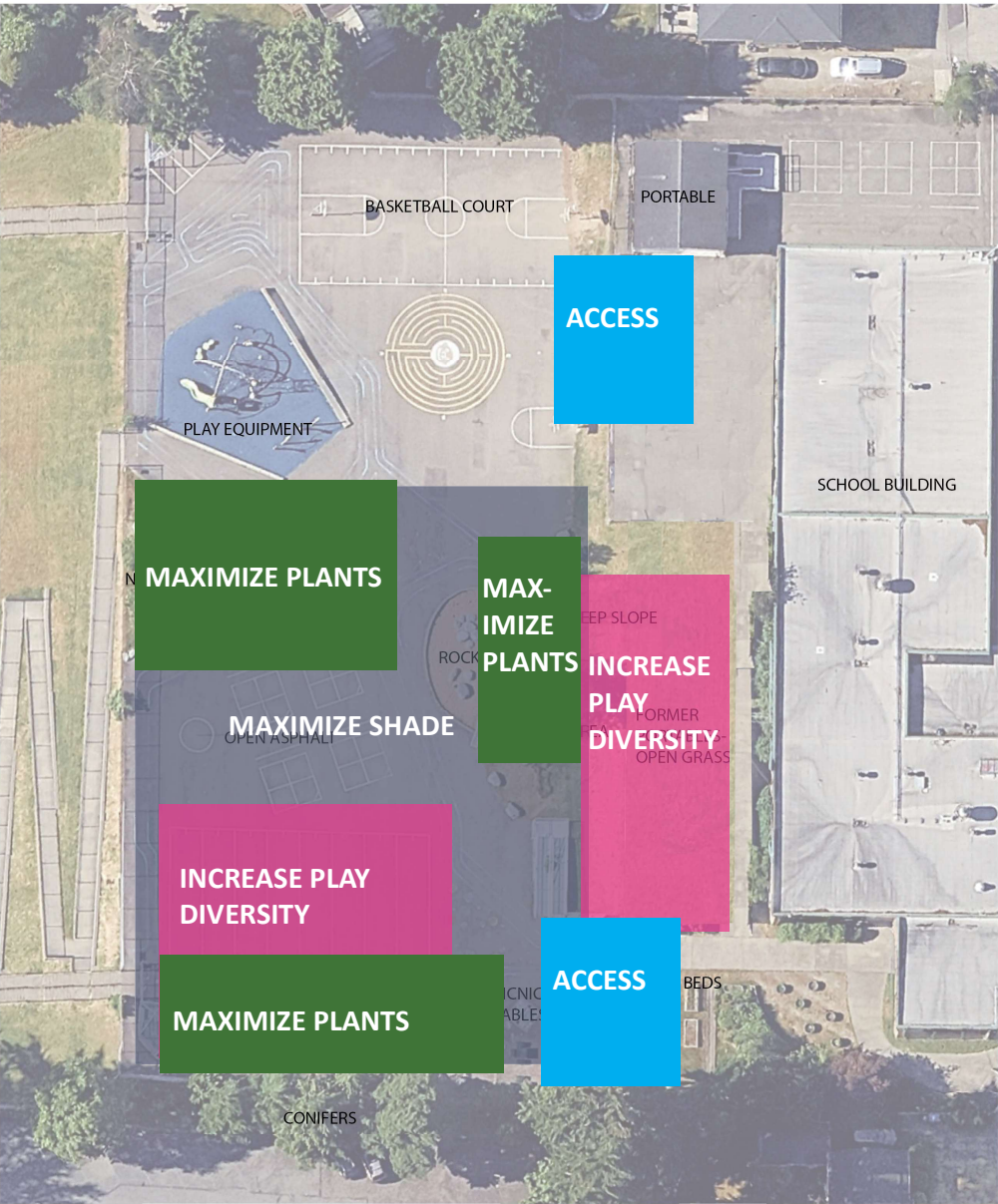


Fig 7.9: View Ridge Elementary living schoolyard goals

PHASE 1: NEAR TERM STRATEGIES

This phase fosters community-capacity building through programming. The design engages existing site assets while avoiding permanent landscape interventions. Urgent needs include bringing students outdoors during non-recess times, engaging with the vegetation that already exists on site, teaching stewardship principles, and supporting students in performing site analysis and other climate studies. Participatory design processes begin: students can create design interventions that immediately impact their environments in temporary and low-cost ways.

GOALS

- Build community understanding of living schoolyards
- Introduce community stewardship model through curriculum, “Trees for Schools”
- Engage in participatory design projects that directly impact schoolyard experience with little cost or curricular revision
- Cardboard loose parts play on playground
- Nature loose parts play on playground (delivered by city or volunteer gardeners, plant offcuts, leaves, fronds, roots, etc. as seasonally appropriate)

CONSTRAINTS

- Temporary interventions only (within VEP standards)
- Interventions build community knowledge of living schoolyards
- Low budget
- Low teacher effort (no extra burdens for teachers)

STRATEGIES



- Leadership supports outdoor learning curriculum
- Leadership supports Trees for Schools program
- Participatory stewardship and outdoor learning support long term community investent in schoolyard
- Build capacity and tolerance for iterative approach to schoolyard design and stewardship

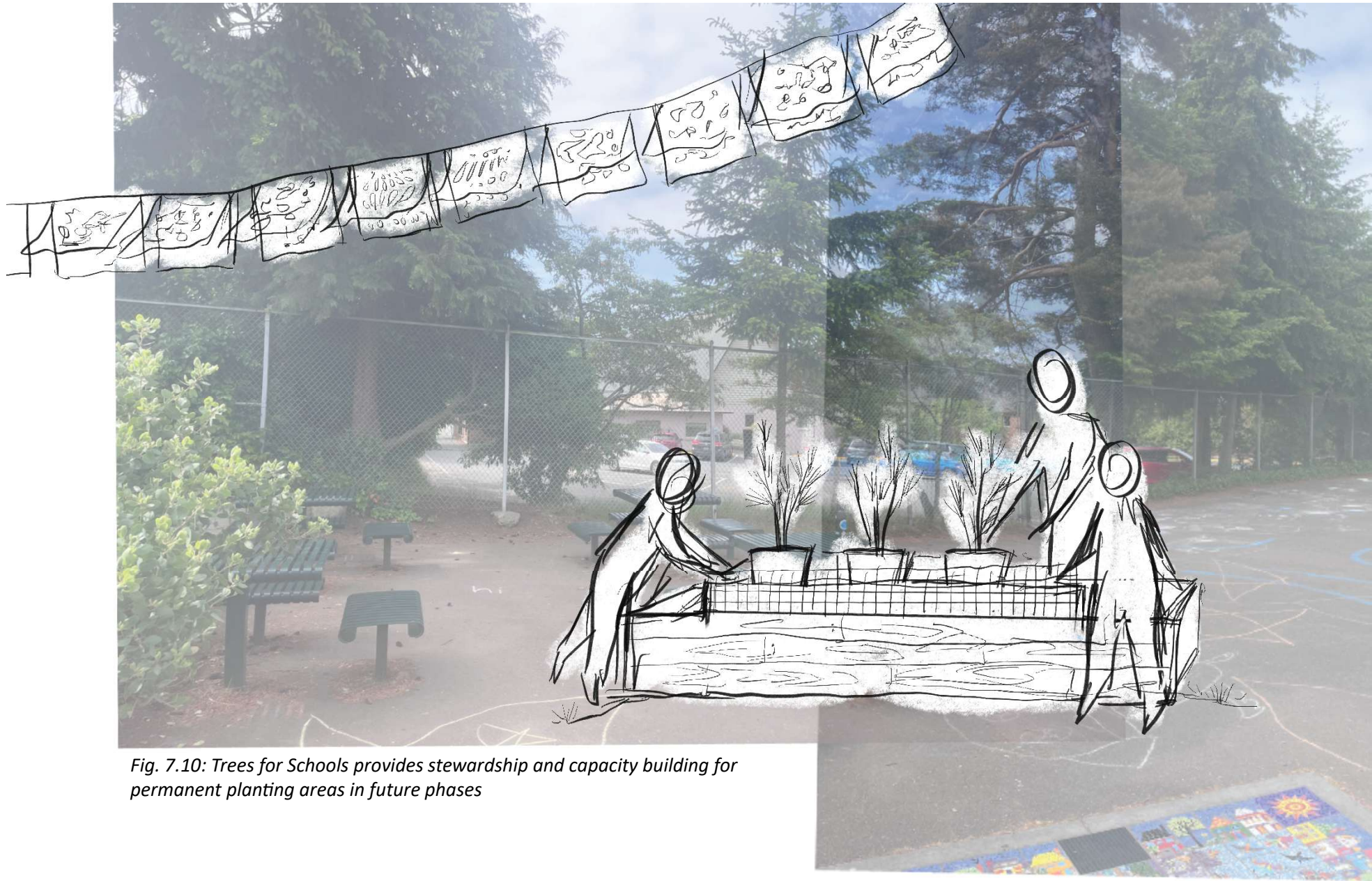


Fig. 7.10: Trees for Schools provides stewardship and capacity building for permanent planting areas in future phases

POTENTIAL OUTDOOR LEARNING CURRICULUM CONNECTIONS

Science: Surface and ambient temperature monitoring, wildlife survey, weather observation, simple machines built with nature loose parts, garden observations, composting, stormwater site observations, seasonal change observations

Social Studies: Daily round mapping, Cultural history and context research, ethnographic play observations, ethnographic peer to peer interviews, historical site context research, change over time study

Art: Student-designed fence weaving, collaborative chalk drawing, mural painting, student-designed pennant flags, nature loose parts land art

P.E.: stewardship, meditation, gross motor development activities, fine motor development activities, risk assessment development



Fig. 7.11: Chainlink fence weaving (Pinterest)



Fig. 7.12: OASIS schoolyard temporary wooden furniture (CAUE 75)



Fig. 7.13: SPU Urban Tree Nursery: Cedar City (Seattle Public Utilities)



OUTDOOR LEARNING (ALL SCHOOLYARD)
Students engage with the schoolyard through interdisciplinary classroom studies. Science, art, math, social studies, and P.E. classes directly link outdoor features and lessons with learning goals.



STUDENT ART IN THE SCHOOLYARD
Fence weaving creates temporary, affordable, and high-impact change to schoolyard features. Students contribute to the weaving in art or homeroom classes, which supports outdoor learning connection and sense of place.



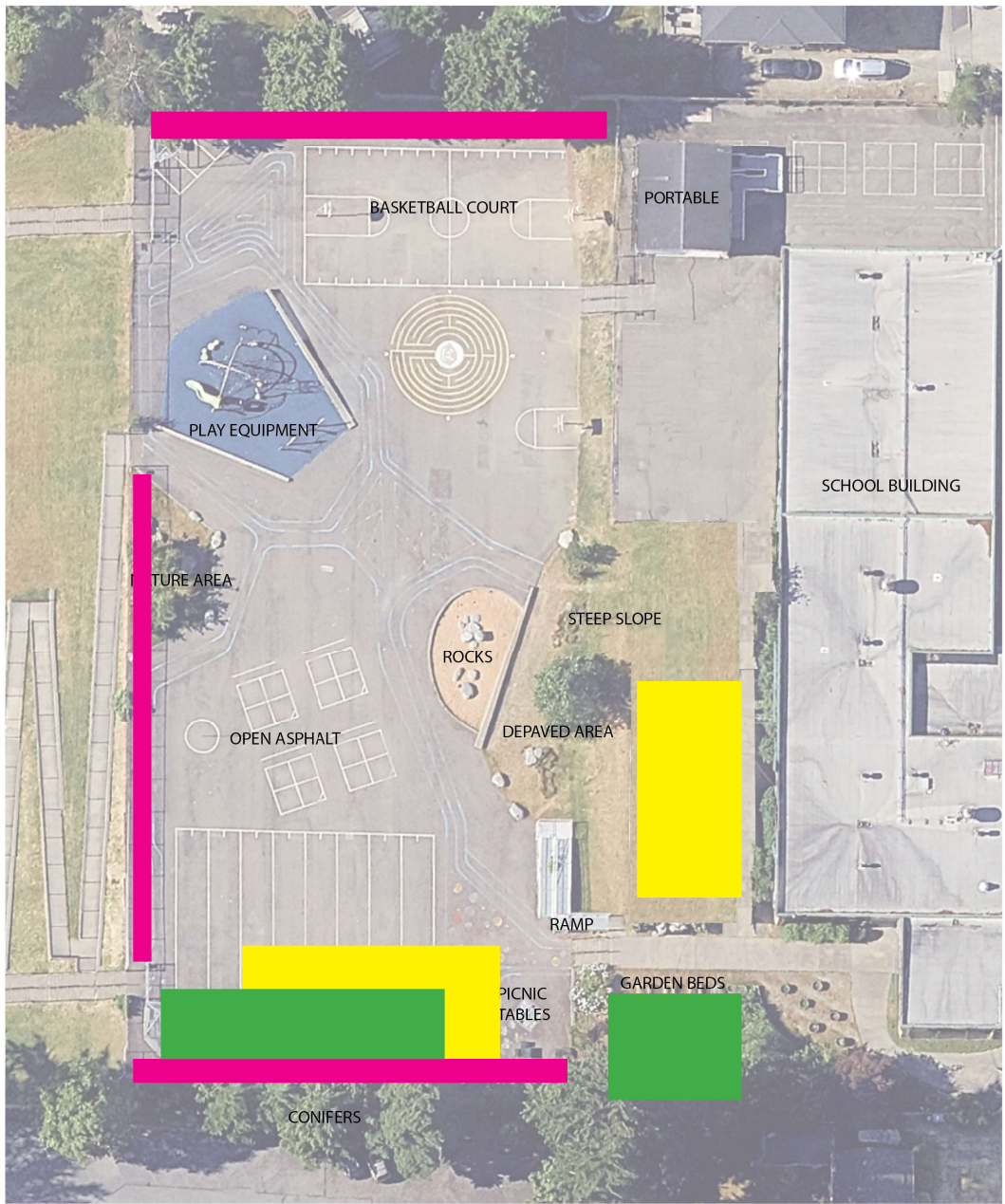
TEMPORARY FURNITURE
Furniture constructed through participatory design processes can support delineation of spaces, diverse play opportunities, connection with natural materials, and sense of agency. Furniture could move or change depending on school and student needs.



TREES FOR SCHOOLS
Tree starts adopted by school classes sit within demarked areas of the playground. Stewardship skills are taught to all students to support tree health. Once trees are large enough, they are planted on site and new tree starts are adopted.



Fig7.14 Elementary students learning outdoors (Milwaukee Metropolitan Sewerage Department)



NEAR-TERM SITE PLAN

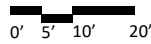


Fig 7.15 Near term site plan



PHASE 2: LONG TERM STRATEGIES

This phase represents a living schoolyard landscape post-depaving and initial installation. The site includes planting areas, varied topography, shade trees, accessible and diverse play features, and curricular activities. Hard surface play areas persist, but the requirement for 1 acre of paved surface has been removed from ed specs. Planting areas become flexible use play spaces that may shift in program and vegetation as adaptive management and school needs evolve.

GOALS

- Plant survival in high-stress conditions; plants are drought tolerant, bendable, fast-growing, self-sowing
- Trees for Schools results in 30% canopy cover in recess areas
- Vegetation supports increased biodiversity
- Curriculum engages schoolyard across subjects
- Students participate in schoolyard design in an ongoing process
- Stewardship plan incorporates current students and community members, also brings high school students to elementary schools for specialized maintenance and teaching opportunities
- Connected community supports overall sense of belonging in neighborhood, sense of place, identity, social skills

CONSTRAINTS

- Temporary interventions only (within VEP standards)
- Interventions build community knowledge of living schoolyards
- Low budget
- Low teacher effort (no extra burdens or preparation for teachers)

STRATEGIES



- SPS leadership partners with NGOs and govt orgs to depave large areas of schoolyards
- participatory, iterative stewardship supports ongoing change in planting and features while supporting overall plant survival and student learning experiences
- Long-term funding support by SPS, NGOs, and govt integrate stewardship into schoolyard

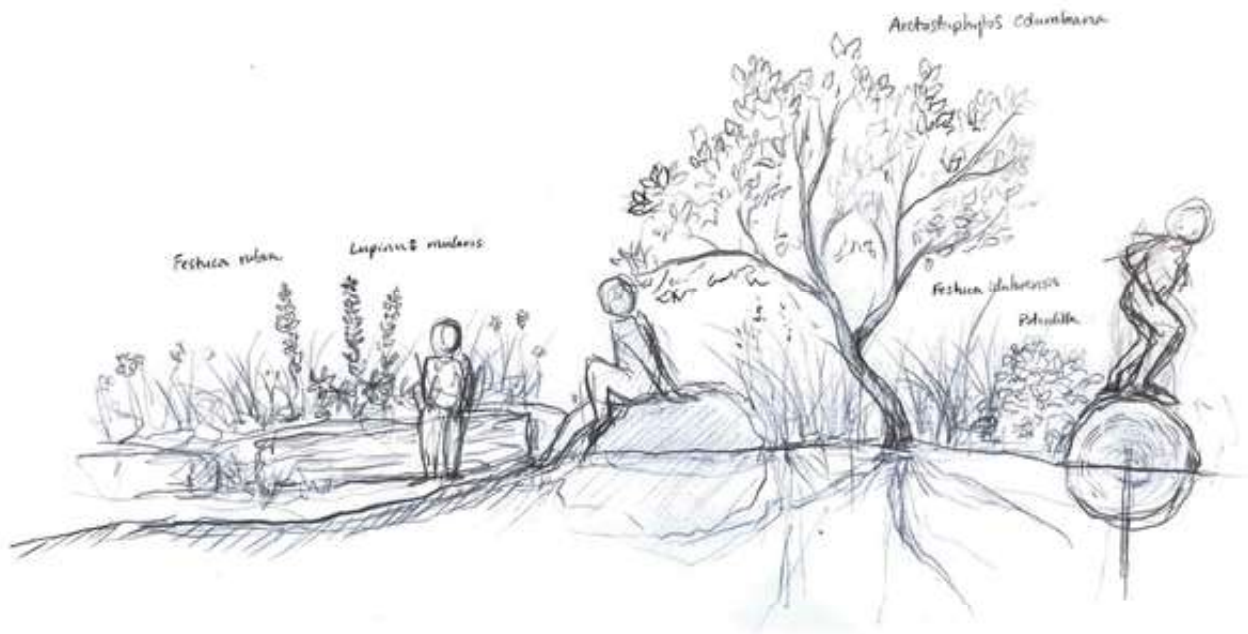


Fig. 7.16: Study of plant communities and potential student interactions within planting areas

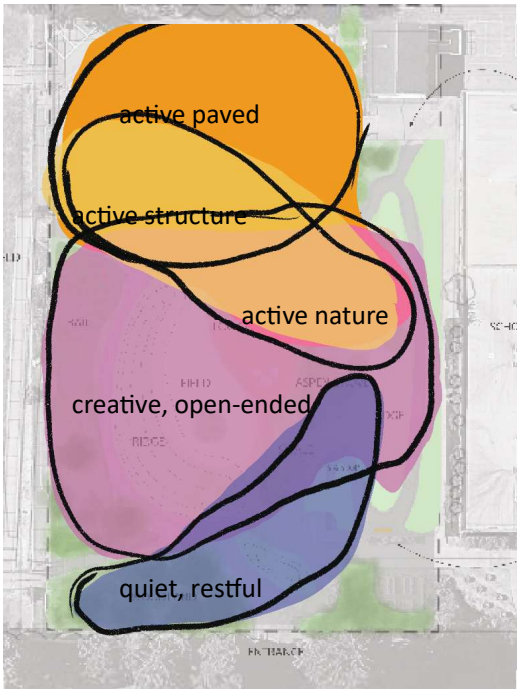


Fig. 7.17: Program



Fig. 7.18: Woodland edge areas support creative nature play



Fig. 7.18: Chiloquin Elementary log climbers (ABLE and Trust for Public Land)



Fig. 7.19: OASIS schoolyard organic materials play structure precedent (CAUE 75)



A. NATURE PLAY STRUCTURES

The existing topography supports an in-grade hill slide as an additional active play element that engages nature connection and gross motor development. Log climber elements provide more active play opportunities while also providing opportunities for risk assessment and environmental observation of organic materials over time.



B. LOOP PATH

A 6 feet wide paved loop path extends around the perimeter of the meadow and woodland areas, becoming a space for running, walking, and biking.. 5% sloping paths wind up and down the eastern ridge, integrating accessibility into standard paths of travel.



C. DYNAMIC MEADOW

This large central planting area is a space for running, creative play, nature exploration, and lounging. Shore pines and hairy manzanita trees punctuate the ruderal-dominant meadow, which is anchored by red fescue, idaho fescue, and yarrow. The plants in this space are intended to self-seed, creating a sense of dynamic thrill as annual plants move throughout the space over time.



D. RUSTLING ASPENS SWALE GROVE

GSI and sensory planting design intermix in a rain garden swale planted with aspen trees, rushes, and low dogwood. This area is accessible to students, but boulders surround the deepest swale to encourage perching rather than running through.



E. LOOSE PARTS WOODLAND EDGE

The southern and western edges of the site are spaces for shadier woodland plants and creative loose parts play. Vine maples provide fall color, while evergreen shore pines and oregon grape anchor the space with native PNW plants.



F. OUTDOOR LEARNING (ALL SCHOOLYARD)

Building from the curriculum integration from the first phase of design, stewardship, participatory design, and outdoor learning are a regular part of students' learning experiences. PTO stewardship supplements curricular stewardship of plants, while SPS facilities maintenance provides basic support. Planting areas are designed to thrive in low-water, high-disturbance conditions, which



Fig. 7.20: Dynamic meadow



Fig. 7.21: Rustling aspens swale

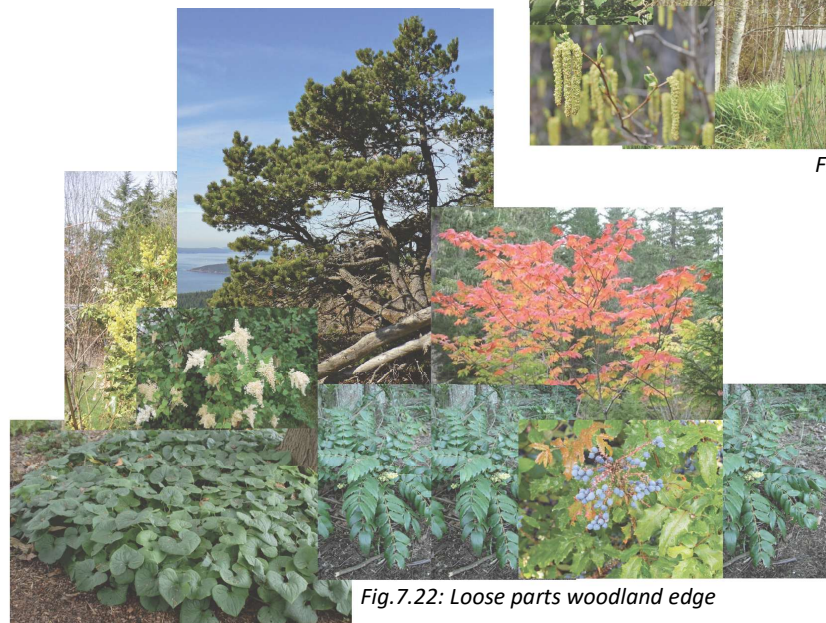


Fig. 7.22: Loose parts woodland edge



LONG TERM SITE PLAN

Fig. 7.23: Long term site plan



Fig. 7.24: Long term integration of stewardship, curricular engagement, and plant-people connection can build dynamic educational schoolyards

Conclusion

“A key aspect associated with the effective and responsive governance of schoolyards concerns their design and features. Currently, one may observe a preference for neat and orderly outlooks, with certain avoidance of messiness and loose elements. However, it is precisely such features that powerfully benefit cognitive development, creativity and social skills, allowing children to manipulate and assign schoolyards with a meaning themselves (Van Dijk et al., 2022, 2018)”(Sekulova 2024).

This speculative exercise prompts consideration of the role of designers in living schoolyard systems. How can design choices support the ongoing messiness of dynamic living spaces? How can frames, edges, and materials contribute to a perception of ordered chaos? The existing standards for schoolyard design result in static, palatable, dull spaces. Living schoolyards ask designers to protect the integrity of child-created spaces through open-ended scaffolds, which inherently change over time. Student participation in design processes is a crucial element of living schoolyards, but existing SPS priorities limit student involvement in loose parts play and in larger scale schoolyard renovation projects. Manipulatability is a design feature that provides significant benefits to students. Building SPS capacity for tolerating the messiness of loose parts, seasonal change in vegetation, and undetermined design outcomes is a priority for the initial phase of speculative design.

In the near term design for View Ridge, prioritizing curricular connection between schoolyard features and required study increases students’ time spent in their schoolyard. These connections result in physical schoolyard features that support some initial living schoolyard benefits, including sense of place, stewardship, cultural relevancy, and dynamic change. The open-endedness of student contribution at this phase supports involvement through pre-determined scaffolds, including Trees for Schools, temporary wooden furniture, student-made flags or pennants, and fence weaving. In theory, as SPS leaders and community members witness the results of engaging students in schoolyard design through curriculum, the social and creative benefits of engaging with messiness will be evident in student behavior. Figure 7.25 illustrates potential effects of engaged students and stewardship, which supports long term planting area success. The figure also illustrates the consequences of ignoring curriculum and stewardship, which can lead to disengagement and plant death.

The long term design reflects the product of long-term partnerships between district leaders, NGO partners, and community members. This landscape includes beneficial features including varied plant communities, diverse and inclusive play opportunities, and inclusion of participatory design processes.

Planting areas extend from the south part of the site, each designed to serve a different educational, emotional, and community purpose. The central dynamic meadow area extends the existing topographical interest of the steep slope to a new berm and swale. Between the berm and the existing slope lies a meadow designed to be mowed, functionally becoming an ecologically beneficial play field. Meadow plants were selected for their vigor, ensuring that children trampling and picking plants will not impede the plants’ self-seeding and overall planting area survival. Many plants in the dynamic meadow area are extremely hardy herbaceous annuals, developing foliage, blooms, and seed heads rapidly during late winter and spring. Students will be present to witness the changes in plant morphology through the seasons, and will also be able to engage with plant population dynamics as they observe different species growing in different areas of the meadow over the years.

The aspen swale grove is intended to support quiet creative play and emotional regulation. The sounds and sights of aspen leaves moving in the wind provide sensory input and creative a sense of distinct difference from the messier, wilder meadow area. Boulders placed around and between aspen trees to discourage running at speed through the grove. The woodland edge area is home to loose parts play. Students are encouraged to build in this area, which is separated from the meadow, grove, and nature play structures by the 6 foot wide loop path. The delineation of spaces supports student safety and also promotes wildlife habitat in quieter, less traveled areas of the schoolyard.

The long term design demonstrates the ways in which diverse play opportunities and ecological systems can integrate. Annual dynamic meadow plant life cycles are educational for students, support pollinators, and provide a sense of wonder as plants shift and move across spaces over time. Shade and refuges increase as trees and plants grow, creating a cooler and more engaging schoolyard even in warm seasons. The stewardship of the schoolyard will include planning and design for ongoing projects, so students who were not part of the initial schoolyard transformation are still involved in the ongoing development of design features.

IMPACT OF STEWARDSHIP AND CURRICULUM ON LIVING SCHOOLYARDS

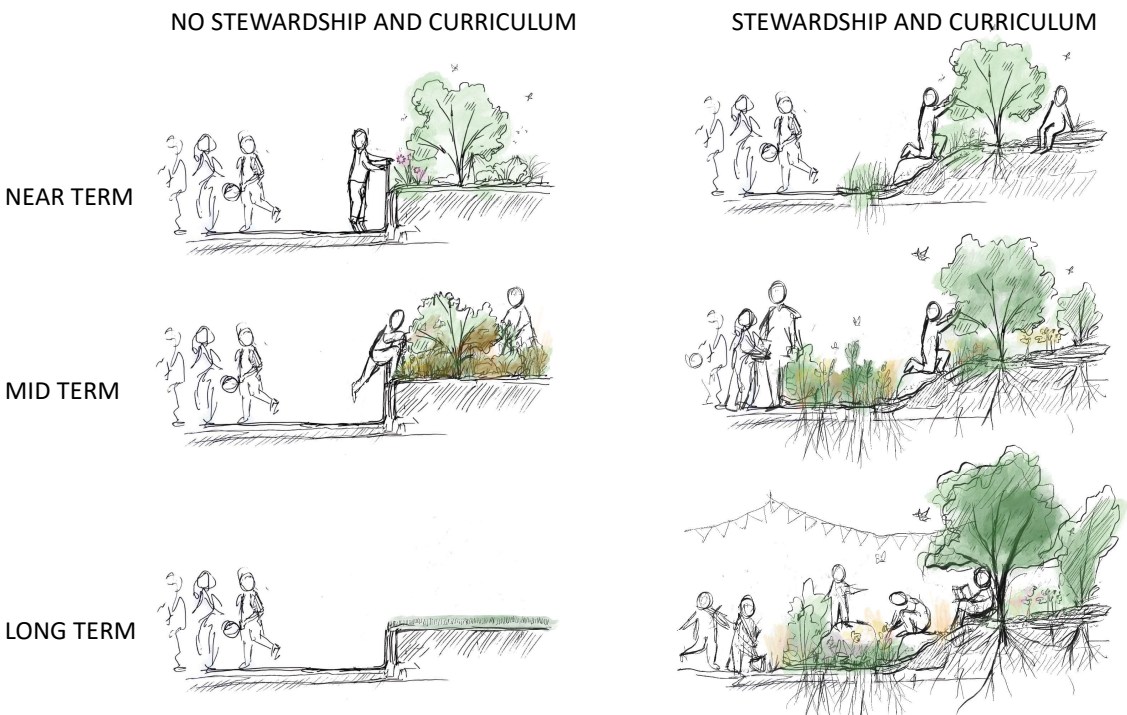


Fig. 7.25: A speculative diagram of impacts of stewardship and curriculum on schoolyard planting areas and living schoolyard success.

SPECULATIVE DESIGN REFLECTIONS

- Phased design allows for gradual changes to processes and facilitates cultural shifts that ultimately support long-term sustainable change
- Student participation can be integrated into required curriculum across multiple subjects, including art, science, social studies, math, and P.E.
- Experimentation and iterative mindset support planting area success; plants with ruderal and stress-tolerant qualities may perform better in high disturbance schoolyards
- Building cultural tolerance of changing landscapes and openendedness in design can begin with temporary interventions and knowledge building



Fig. 8.0: Students exploring a path (Illustration by author).

CHAPTER 8

CONCLUSIONS AND NEXT STEPS

How might Seattle Public Schools and landscape architects support the implementation of equitable and sustainable living schoolyard landscapes ?



Fig. 8.1: Students plant a Miyawaki forest at Robert Eagle Staff Middle School (Seattle Public Schools)

The magic of public schoolyards is in their mundanity. Schoolyards are rare public play landscapes that children return to every day for multiple years, in the process gradually attuning to seasonal change, ecological processes, and sense of place. Children are given more opportunities for decision-making, agency, and creativity at recess than during typical classroom learning, which makes schoolyards extraordinary places for student-led design. Living schoolyards magnify the existing positive features of schoolyard play while repairing the harms caused by typical schoolyard landscapes. The numerous benefits that living schoolyards provide make them seem like an obvious solution to the many flaws of public education systems in the United States. Despite the clear benefits of living schoolyard systems, however, the process of creating and sustaining living schoolyards in a country that does not provide for children’s basic needs is daunting.

Public schoolyards are complex systems influenced by bureaucratic leaders, policy, and cultural values. Living schoolyard systems require partnerships between governments, school districts, and communities. Consistent funding must support ongoing design and stewardship of the landscape, and participatory processes should be centered throughout. The complexity of schoolyard stakeholders and processes is reflected in my research process for this thesis, which spanned topics including policy, racial equity, organizational processes, ecological systems, aesthetic landscape preferences,

developmental psychology, sociology, cultural perceptions of children, public space, and educational theory. From this research, interviews, and lived experience, I determined that typical U.S. public school districts do not have the organizational capacity to design and maintain living schoolyard landscapes. Schoolyard greening efforts are common, but supporting vegetation in majority-paved, limited-stewardship environments is difficult to sustain. Additionally, government or district-funded participatory design processes are rare. When vegetation is present in schoolyards, student engagement is typically limited by curricular rigidity.

Although these factors make living schoolyards difficult to establish, key precedents from Oakland, Milwaukee, and Paris demonstrate necessary elements for sustainable and equitable systems change. OUSD Living Schoolyard Guidelines provide clear directions for adopting organizational processes that support living schoolyard design, and the OUSD partnership with Trust for Public Land shows the potential for NGO and district collaboration. OASIS schoolyard systems emphasize fast scaling and government funding, which is possible with strong city government support. Milwaukee Green and Healthy Schoolyards approach scaling differently: small annual cohorts managed by Reflo achieve schoolyard greening at a moderate but sustainable pace. Interviews with SPS employees and landscape architects revealed interest in implementing schoolyard greening from individuals. Despite this interest, lack of support from

SPS leadership, restrictive design guidelines, funding allocation, and limiting curriculum have prevented district-level changes to design and maintenance processes.

In spite of district leadership resistance, individual schools within SPS have achieved some features of living schoolyard landscapes. Hawthorne Elementary’s S.T.E.A.M. Playspace was the first SPS pilot of loose parts play, which was achieved by extensive advocacy by Eric Higbee, landscape architect and former Hawthorne parent. The Hawthorne schoolyard project was funded by the school PTO and a neighborhood matching grant, which separated the project from typical time and design feature restrictions of SPS Capital Projects voter-funded schoolyards. Concord International Elementary’s Puma Playfield is another example of community advocacy. Strong community involvement throughout the process led to strong district employee support for the project, which resulted in the eventual voter-levy funding of a community-designed and initiated project. Conrad Plyler personally advocated for Concord’s inclusion in the levy, setting an excellent example of resistance to inequitable processes from within bureaucratic systems.

There are several strategies that can likely support the shift toward living schoolyards in a significant way: outdoor learning curriculum, partnerships with NGOs and the city, and supportive district policy will provide a scaffold for future dynamic landscapes in schools. Designers can contribute through attention, connection, and advocacy:

“Architects, engineers and gardeners thus need to deeply engage with the concepts of ecology, creative play and outdoor, or experiential, education in the acts of schoolyard (re)making. Responsive governance further entails continuous maintenance, reimagining and remaking of the green schoolyard. Implementing naturalized school grounds initiates a process of adaptation to continuously changing needs and socio-environmental conditions, where unfinished, or flexible, spaces contribute to children and young adults’ identity and sense of place (Rigolon, 2011).” (Sekulova 2024)

Responsive, committed leadership must frame the transition to living schoolyards. The process of implementing and sustaining living schoolyards requires the acceptance of change and loss of control, which must be stewarded by dedicated and knowledgeable leaders. Strong support from leadership is required for long term success, but building community support can and should influence leadership. Direct action is possible:

advocating for community design, building awareness of the value of nature-based play, and practicing long-term environmental stewardship can begin to build momentum needed for the policy and process changes required for living schoolyards. Although the strategies proposed in this thesis are supported by literature review, interviews, and case studies, next steps should entail sharing the strategies with SPS employees and landscape architects to determine their perceived efficacy. Just as living schoolyard design systems should be iterative, the strategies and phases for living schoolyard implementation should be too. Future research paths might evaluate ways in which schoolyard landscapes can engage SPS curriculum, conduct ongoing landscape performance research at SPS sites with some living schoolyard features, or establish coalitions of landscape architects and community members to share design and stewardship strategies for living schoolyards at a grassroots level.



Fig. 8.2: Living schoolyard illustration

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APPENDIX

ELEMENTS OF SITE DESIGN IN GREEN SCHOOLYARDS

Robin Moore lists the following design elements in his book *Natural Learning*. The following list is excerpted from his work (Moore 1997).

- Accessibility (universal design)
- Safety
- Graded challenge
- Diversity and clarity
- Flexibility
- Defensible space
- Supervision
- Permanence
- Change
- Open-endedness
- Manipulability
- Multisensory stimulation
- Ambient microclimate/year round use
- Shelter
- Social interaction
- Design for all ages
- Variety of social spaces
- Variety of spatial experiences
- Refuges
- Completion points
- Spatial orientation
- Landmarks
- Multisensory cues
- Scale, size, shape, enclosure, continuity
- Play above ground
- Differentiated settings
- Edge effects
- Undefined places
- People-plant interaction
- Wildlife habitats
- Domestic animals
- Mix of people-made and natural elements
- Indoor-outdoor relationships
- Ease and economy of construction

LIVING SCHOOLYARD GUIDELINES FOR SPS

The following guidelines adapt the existing elementary education specifications in use by SPS to better support the implementation of living schoolyard systems. The basic structure of the guidelines is derived from Generic Elementary Education Specifications with further adaptation by author.

Seattle Public Living Schoolyard Guidelines: Elementary (K-5)

All outdoor spaces on campus are an extension of the classroom, providing opportunities for formal and informal teaching and learning experiences. The design of such spaces will include students in ideation, implementation, and ongoing stewardship processes as much as possible.

Design Process.

-Applies to all spaces on school campus, including outdoor learning areas, recess areas, and field.

-All students and teachers participate in curricular classroom design activities in preparation for implementation, including site analysis, design charette activities, and community assembly design meetings. Follow SPS Schoolyard Design Curriculum protocols.

-Develop phased implementation plans with the school community to support ongoing development of the site.

2.3 OUTDOOR LEARNING AREAS

Activities.

- Lectures, hands-on learning and individual assignments during instructional time.

- Free play.

- Planting area stewardship activities (students, teachers, community volunteers)

Space Requirements.

- At least 1 area for a class of 30 students to gather and comfortably sit.

- Select site furnishings that subconsciously communicate that children are worthy. (OUSD 2022)

- Growing beds for vegetables, flowers, and perennial shrubs, compost area and adequate circulation between beds for ADA accessibility.

- Accessible vegetation (trees, shrubs, annual plants) for student exploration and curricular activities

- Cistern or rain barrel for irrigation.

-Student-designed art incorporated into furnishings, low walls, or suspended aerial wires

Spatial Relationships.

- If there is a water feature on site, consider locating an outdoor learning area nearby. Development of water feature (solar fountain, dry stream bed, etc.) is encouraged if students are motivated to include one in their design plans.

- Protect from wind, rain, and sun by planting shade trees or locating outdoor classroom near existing shade trees. Shade covers or sails may also be used.
- Locate seated gathering area away from potential distractions. Orient students’ views when seated toward a calming focal point such as trees or shrubs.
- Locate within student recess areas to encourage independent exploration and free play.
- Consider ease of delivery of materials, including plants, soil, and/or compost.
- Consider access for landscape equipment.

Electrical, Plumbing & Mechanical Needs.

- Water source for irrigation. Cistern, hose bib, or rain barrel are acceptable.
- Tamperproof weather resistant GFCI duplex receptacle.

Special Considerations.

- Seating (may be non-traditional such as benches, boulders, logs, etc.) for one group of up to 30 students. Ensure all site furnishings convey a sense of inherent worthiness to students. (See site furnishing detail)
- Rain barrels or cisterns may be incorporated into curricular activities as educational model.
- Tables are optional.
- Provide an area for presentations. Bulletin board or poster display area may be included for visual lesson support. Orient seating to look toward focal area.
- Provide concrete pad for small lockable storage shed for supplies and tools; shed to be purchased from furniture and equipment budget.
- Provide concrete pad for trash receptacles.

2.4 RECESS AREAS

Activities.

- Free play (Active play, loose parts play, nature play, and dramatic play must be incorporated through designed features on site).
- Physical Education (PE) classes.
- Stewardship and maintenance (students, teachers, community volunteers).

Space Requirements.

- When site constraints allow, all-weather surface area should be approximately 1/2 acre in size, not to exceed more than 30% of recess areas. Half-court basketball courts and line games may be included.
- The Child Care/Pre-K program area shall include an adjacent, fenced outdoor play area that meets the WA State Department of Early Learning (DEL) licensing requirements.

- When feasible, provide a separate kindergarten play area (active play, loose parts play, nature play, and dramatic play must be incorporated through designed features on site)
- Grades K or 1 through 5 play area to consist of at least 30% student-accessible vegetation (trees, shrubs, perennial groundcovers), ½ acre or smaller all-weather surface play area (typically asphalt), and a minimum of one age-appropriate ADA inclusive play structure for 5 to 12 year olds.
- Play area should comfortably accommodate half of the school capacity.
- As space allows, all-weather surface play area may include game lines and equipment for activities such as ball play, traffic garden lines, US and World maps as well as classroom line-up markings (one line per classroom).
- It is preferable at elementary school sites to have half-court rather than full-court basketball to allow more children to be involved in games. Half-courts can be laid out side-by-side or back-to-back.
- No outdoor climbing walls unless placed in a secure outside area.
- Covered play area should be provided. Tree canopy, shade/rain covers, or pergola structures are acceptable. When site constraints allow, area should be approximately 2,000 SF.

Spatial Relationships.

- Locate structured play areas near grade level areas, with consideration for noise and distractions with intensive use.
- Covered play area shall be easily accessible from indoor PE teaching area. In order to provide cover for bus loading queues, a location near the bus dropoff /pickup area may be preferred if that location does not subject students to excessive traffic noise, vehicle exhaust, or other health or safety concerns.
- Play areas should be easily accessible from indoor PE teaching area.
- Hard surface play area should be adjacent to the covered play area.
- Hard surface area should be engineered for use for community event parking.
- Planting area edges should be designed to contain loose mulch or plant material within designated areas through the use of curbs or other low barriers.

-High and low activity areas should be separated through the use of subtle topography, low barriers, a change in surface materials, or other visual and spatial cues for delineation of space.

Electrical, Plumbing & Mechanical Needs.

- Water source for pressure washing hard surface walkways and play areas (consider hose bib locations on building).
- Tamperproof weather resistant GFCI duplex receptacles around perimeter of building.

Special Considerations.

- Provide ADA accessible equipment and play areas.
- Planting areas must be accessible to students for free play
- Incorporate sensory-supportive design features including quiet areas, visual and auditory stimulation (see sensory-

supportive design detail), and areas of prospect and refuge within student recess area.

- All play areas including covered play to have good sight lines for ease of supervision.
- Covered play area shall be configured to promote good sightlines and provide ease of supervision.

Field Activity Area

Activities.

- Soccer.
- PE classes.
- Community use.

Space Requirements.

- Ideally, one 360’ x 250’ field for soccer or other field games (or as large as can be accommodated).
- Trees or shade-providing shrubs around perimeter for shade and shelter from elements.

Spatial Relationships.

- Locate near physical education areas, with adequate separation for noise and distractions with intensive use.

Electrical, Plumbing & Mechanical Needs.

- On sites that are part of the current joint use agreement with the city’s Parks & Recreation Department, provide irrigation system for natural grass fields.

Special Considerations.

- School grounds shall be fenced with planned control of vehicular and pedestrian access. Fences shall be designed to prevent access by motorcycles.
- Walkways from school entrances must be planned for ADA access.