DESIGNING PLAYFUL CLIMATE READY SCHOOL GROUNDS

A LOOKBOOK

EVERGREEN

A **climate ready school ground** creates a healthier, more engaging, and more resilient environment for students and community.

Green infrastructure—like shade trees, rain gardens, permeable surfaces, and naturalized play areas—manage stormwater, reduce heat, improve air quality, and restore biodiversity. These natural and built elements are intentionally designed to support learning, physical activity, and wellbeing. We recommend integrating the following **key design elements** and **child-centered play spaces** explored in this lookbook.

KEY DESIGN ELEMENTS

VEGETATED
LANDSCAPES

TOPOGRAPHY
LANDFORMS

PERMEABLE
SURFACES

SUSTAINABLE
MATERIALS

PLAY & LEARNING
SPACES

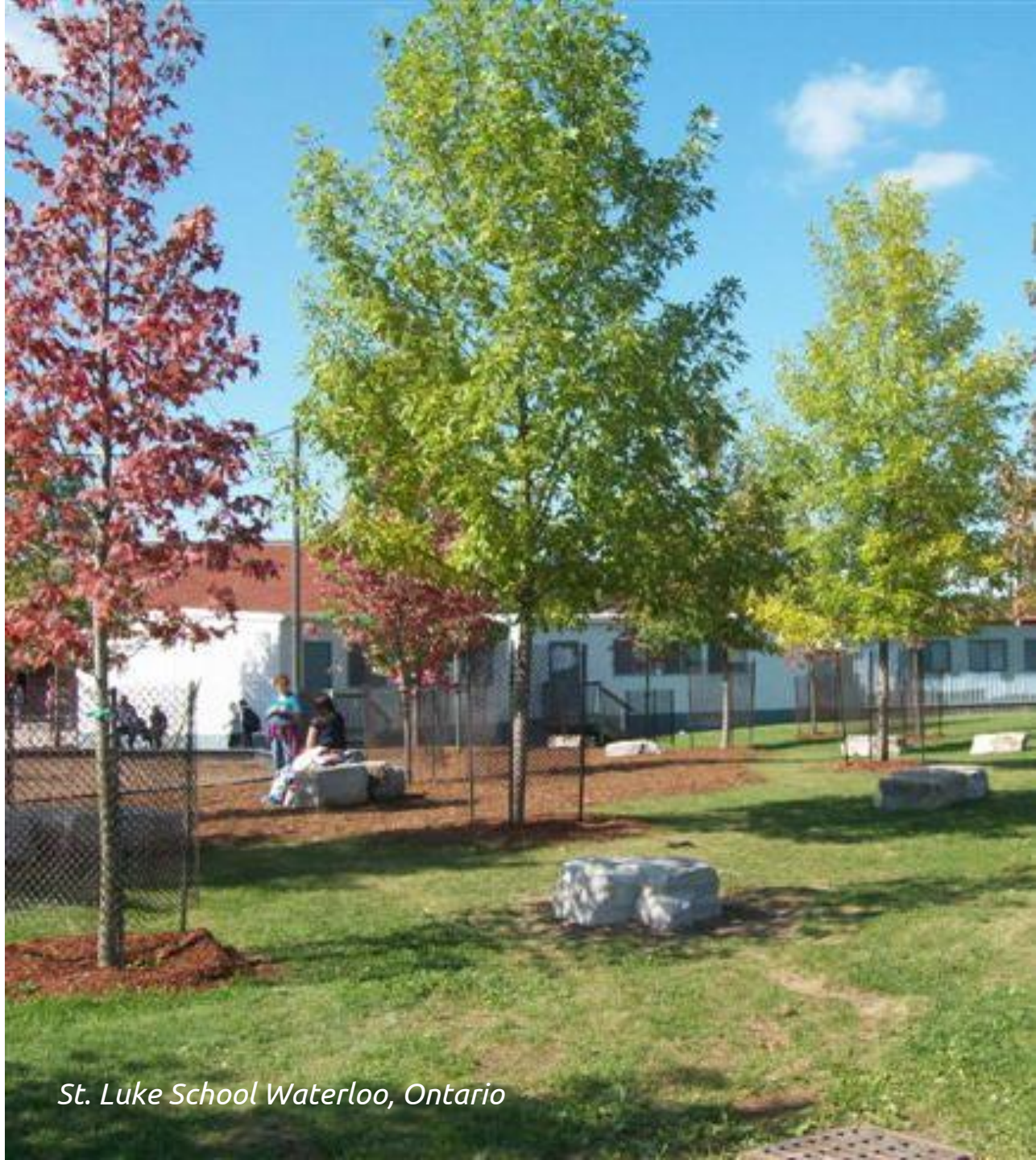
VEGETATED LANDSCAPES

Planting a mix of **large and small trees and shrubs** creates structural diversity, habitat, and engaging outdoor experiences, while also building resilience against pests and disease. Native species are especially valuable, storing carbon, supporting biodiversity, and helping schools adapt to climate change.

As trees mature, their benefits multiply—providing shade, stormwater absorption, erosion control, improved air quality, and reduced energy use for cooling and heating.

VEGETATED LANDSCAPES

Create groves of trees in **soft surfaces** comprised of a diversity of native species. This creates natural gazebos for shade and cooling. Trees should be located close to the school building (rather than lining the far edges of the school ground), near sports fields to shade spectators and in areas between and around active play spaces.



St. Luke School Waterloo, Ontario

St. Dunstan Catholic School, Toronto, ON

When planting trees in **hard surfaces**, remove asphalt and granular base.

Then plant trees in groves at 5 metres apart (or appropriate to species). Install a rolled asphalt edge to contain mulch.

TOPOGRAPHY LANDFORMS

Landforms and site drainage are central to climate ready school grounds. A successful design will aim to reduce the rate and volume of runoff by storing, slowing down and absorbing water on site. This can be achieved by balancing raised landforms (areas that shed water) with absorbent depressed landforms (areas designed to receive water).

Raised landforms can help create microclimates and reduce wind and noise pollution to increase the useability of school ground spaces.

TOPOGRAPHY LANDFORMS

Swales and grass swales on school grounds act like natural drainage channels that guide rainwater slowly across the landscape so it doesn't overwhelm storm drains or cause flooding.

Instead of rushing off hard surfaces like asphalt, stormwater is directed into these shallow, planted depressions where grasses, mulch, and sometimes permeable pavers help absorb and filter the water. This process allows more water to soak into the ground, replenishing soil moisture while also creating greener, softer spaces that add to the function of the school ground.

TOPOGRAPHY LANDFORMS

Vegetated berms are planted with trees, shrubs, perennials, and groundcovers that hold soil in place and prevent erosion. They can help shape play and learning areas—defining outdoor classrooms on flat sites.

Vegetated berms also act as natural windbreaks or buffers from street noise, creating calmer, more comfortable spaces for students. If space allows, pathways along the top can give children new routes to explore.

PERMEABLE SURFACES

Permeable materials—such as mulch, sand, gravel, or permeable pavers—allow water to filter through the surface rather than pool or flood. These strategies not only reduce flooding and recharge groundwater but also create opportunities for students to see sustainable water systems in action.

By observing how rain is absorbed, filtered, and redirected, students gain a hands-on understanding of the water cycle and the role green infrastructure plays in building climate-ready communities.

PERMEABLE SURFACES

Permeable pathways should be considered for hardscape areas to reduce stormwater runoff volume. They can be constructed of either a porous material that allows stormwater to flow through it or non-porous blocks to allow water through the gaps or joints. Permeable pavers can be used in pedestrian areas and low-volume or low-speed areas such as driveways that do not form part of bus or fire routes.

Tip: Locate pathways 2 metres from the base of mature trees to lessen the impact on tree roots.

SUSTAINABLE MATERIALS

Make a commitment to minimize the environmental impact of the project with design choices, materials selection and construction strategies. Prioritize **locally sourced materials** to reduce transportation emissions which also supports local economies.

Reuse materials such as soil excavated from nearby school builds. Retaining walls can be reimagined using mixed-material drawn from surplus resources already within the school board’s network.

SUSTAINABLE MATERIALS

Designing with **repair** in mind ensures that features can be maintained and adapted, extending their useful life and reducing waste. An asymmetrical, mixed-material low wall can be easily repaired with mortar and any stone or brick.

Custom decks constructed from standard-sized boards allow for straightforward maintenance. Boards can be swapped out by staff or even students in a supervised learning project, turning sustainability into an educational opportunity.

Play decks made of store bought lumber and White Ash log edging. These were cut from trees that were felled in the region that had succumbed to the Emerald Ash Borer infestation.

PLAY & LEARNING SPACES

- **ECOLOGICAL** SPACES
- **ACTIVE** SPACES
- **INDIVIDUAL** SPACES
- **GATHERING** SPACES
- **EXPERIMENTAL** SPACES

ECOLOGICAL SPACES

A school garden is more than a growing space—it's a living laboratory where children can explore nature, learn about food systems, and build curiosity, responsibility, and joy.

Whether planted for vegetables, pollinators, or native habitats, gardens connect students to the cycles of life and the web of relationships between plants, animals, and people.

Raised bed food gardens provide paths between food-growing plots for kneeling, wheelchair accessibility and to accommodate the use of tools and wheelbarrows.


Richmond Secondary School -- Richmond, BC

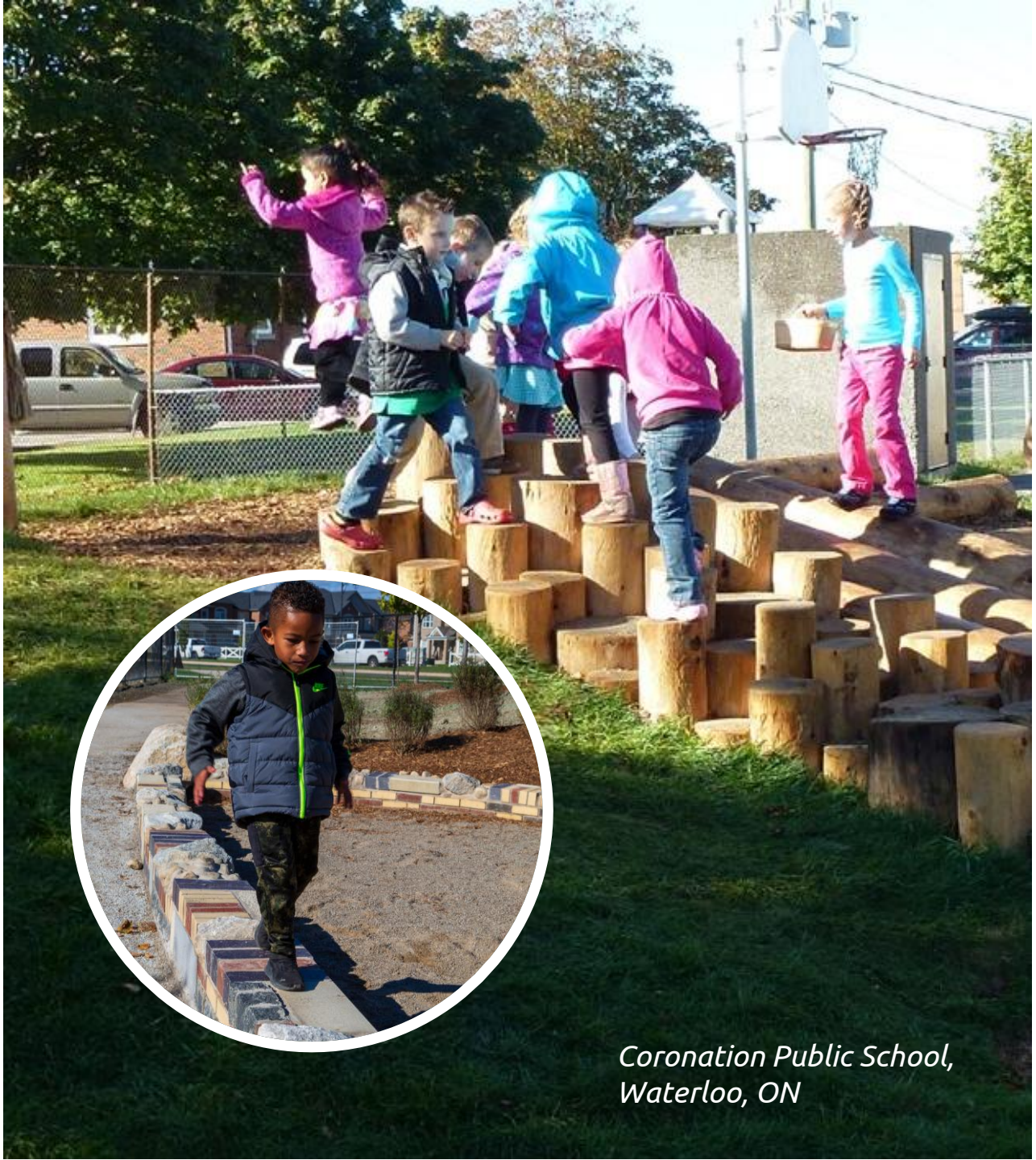
Container gardens in stock tanks are a space-saving solution. They support climate resilience by allowing the planting of tall shrubs and small trees on hard surfaces which brings shade, cooling, and habitat.

Moveable and durable, they’re ideal for starting a variety of gardens.

ACTIVE SPACES

Children are built for adventure—**climbing, balancing, jumping, and swinging**. They seek out physical challenges and thrive on the excitement of not knowing exactly what will happen next.

Climbing and navigating natural elements like rocks, logs, and bridges allow children to test their limits, build skills, and gain confidence.



Coronation Public School, Waterloo, ON

ACTIVE SPACES

Balance is a fundamental part of children's physical development and play is where it happens best. Balancing on logs, rocks, low walls, and uneven ground challenges children to focus, adjust, and coordinate their movements. These playful steps of wobbling and recovery build body awareness, concentration and persistence.

ACTIVE SPACES

Sliding offers a thrilling combination of speed, height and movement. Sliding builds confidence as children learn to navigate anticipation and manage their own limits.

ACTIVE SPACES

The main navigation through the school ground should be made up of a network of **accessible pathways** using a variety of surfaces. Asphalt, compacted limestone screenings, and permeable pavers will lead students though an immersive nature-rich learning environment.

Make all entry points to play spaces and elements fully accessible – this provides a welcoming and warm invitation to explore and experience the whole school ground.

INDIVIDUAL SPACES

Seating areas—like a bench in the shade, a log circle or a quiet nook—are great individual spaces. They offer children places of repose for one-on-one conversations, quiet reflection, or small acts of friendship, balancing the energy of active play with moments of calm.

GATHERING SPACES

Large group **gathering spaces** transform school grounds into outdoor classrooms where learning is active, sensory, and connected to the living world.

Gathering spaces invite hands-on exploration, collaboration, and strengthen social connections.

EXPERIMENTAL
SPACES

When children play together in **sand** areas, they naturally engage in collaboration, negotiation, and role-play—building social skills and practicing communication. As a dynamic, nature-based material, sand fosters curiosity, experimentation, and helps to build children's social skills, making it an essential element in any outdoor play space.

Water play offers rich opportunities for hands-on learning and creative exploration. Children experiment with the properties of water—its flow, weight, movement, and ability to transform—gaining early insights into physics and natural systems. Outdoor **loose parts** invite open-ended play, encouraging children to construct, test, and adapt their ideas.

In these experimental spaces, children build the confidence, creativity, and social skills to work together, solve problems, and care for the world around them — all key to growing up ready to face a changing climate.

CASE STUDY

Irma Coulson Public School is a kindergarten to Grade 8 school with 1,000-plus students in Milton, Ontario. It is also **Canada's first ever climate ready school**.

Transforming the school ground into a vibrant and diverse green space for outdoor learning began in the spring of 2020 and was completed in the fall of 2022.

The Climate Ready Schools Pilot project was initiated and coordinated by Evergreen in partnership with the Halton District School Board.

A climate ready school uses a **sponge school ground** strategy to improve climate resiliency and minimize flood risk.

Designed to soak up, store, and slowly release rainwater (much like a sponge) the ground is shaped and built with natural systems that capture water where it falls.

Features such as rain gardens, grass swales, permeable pavement and tree groves allow water to seep into the soil, filter naturally, and recharge groundwater.


Spongey meadow grass
Mini stormwater swales
Absorbent mulch
Permeable pavers
Permeable crushed limestone

The collaborative project at Irma Coulson deftly prioritizes play and learning space along with climate-resilient design. Students now experience ecology up close, are active and more confident outdoors, can find a quiet shady nook or gather easily in groups.

Click here to read the whole case study.

Since 1991, Evergreen has supported over 6,000 schools across Canada and partnered with school boards to drive system-level change. Greener school grounds improve student wellbeing, strengthen communities, and help schools adapt to climate change. We're committed to bringing Climate Ready Schools to scale—let's work together to make it happen.

For more on Climate Ready Schools visit the Evergreen Resource Hub: **evergreen.ca**