

GROWING WITH THE ROOTS

Re-Connecting Youth with Nature



NATURE
PLAY AND
EXPLORATION

RESTORING
NATIVE
ECOLOGY

SEASONAL
OPPORTUNITIES



Project Importance

Children today are becoming increasingly disconnected from the natural world. This is directly related to the increased amount of time spent indoors which is likely caused by limited access to natural green spaces, time spent on screens and parental safety concerns. Too much time spent indoors leads to reduced physical activity, lower physiological well-being, increased social-emotional vulnerabilities and a lack of care for the environment. While these trends are detrimental to the child, they are also detrimental to the environment. In a time where pro-environmental advocates are needed more than ever, our next generation of environmental stewards are disconnected from the natural world. This begs the question; how can we better connect the next generation of youth to nature? Growing with the Roots is a design solution intended to provide children with the opportunity to connect with nature by being highly accessible to the surrounding communities in West Fargo, ND. A lack of accessibility to naturalized spaces in this area of the city calls for an ecological community park, centered around nature-based play and learning, to help children form a bond with nature, while also enhancing their learning, development, and environmental stewardship.

Site Analysis

STRENGTHS

Located adjacent to the site is the Lodoen Community Center, which consists of a variety of programs including Early Childhood Development, West Fargo Public Library, Early Childhood Special Education, Alternate Middle School, Transition Academy, and the Community High School. A majority of the programs consist of youth, which is the primary target audience for the project.

WEAKNESSES

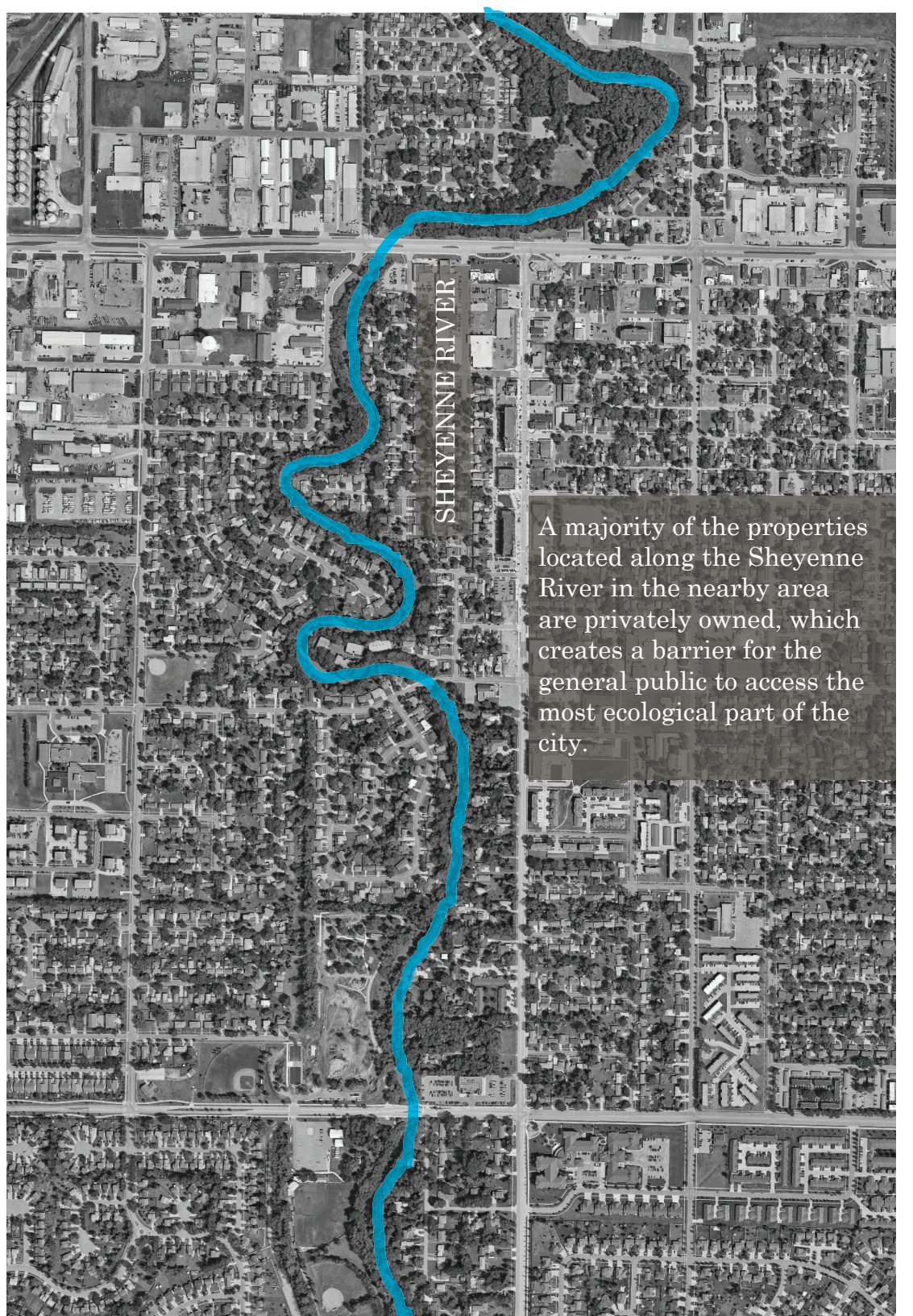
The current site is a former soccer complex, that has become highly underutilized over the past few years due to the increase in athletic complexes being built throughout the city. Maintenance of the site has been minimal, and it continues to degrade over time.

OPPORTUNITIES

A 1.5 mile long community greenway runs directly through the site and connects to various communities and neighborhoods in the district. The greenway can serve as a vital transportation network for nearby communities of youth to re-connect with the natural world.

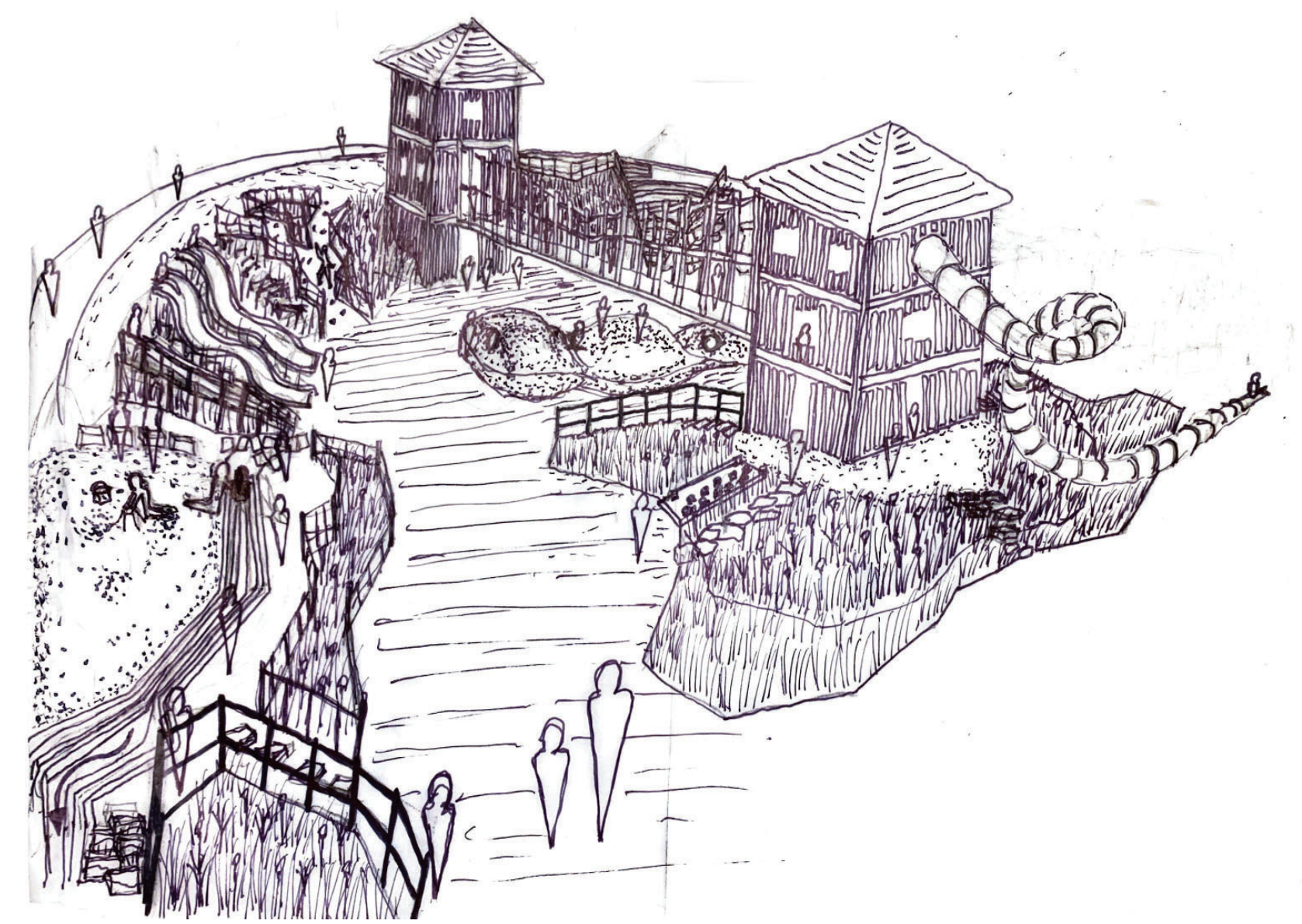
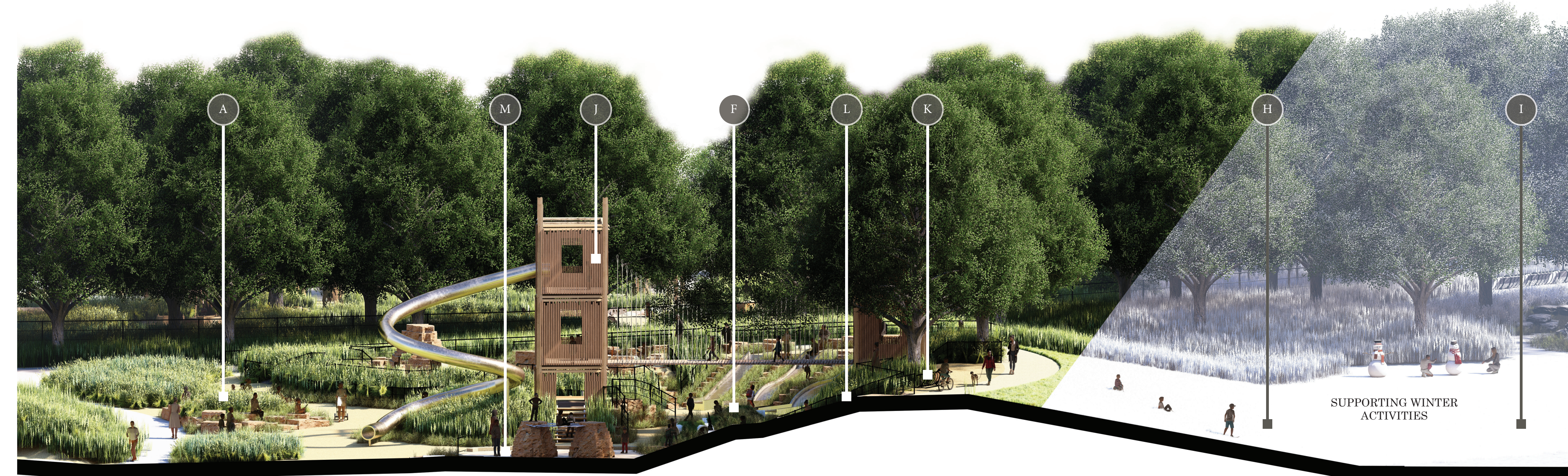
THREATS

West Fargo is one of the fastest growing cities in North Dakota, meaning the demand for housing is on the rise and more developments are being built. While this is certainly a benefit, it is also detrimental to the very little amount of naturalized areas that remain in the region.



Creating Equitable Access to Native Ecology

The site design was inspired by the native biome of the region, primarily the grasslands that had dominated this region for a long time. Other features include a natural dry swale, mimicking the flow of the Sheyenne River, that captures stormwater on site and drains into the two Prairie Pothole wetlands on the site. The dunes, forest, and Oak Savannas were all inspired by areas along the Sheyenne watershed, including the Sheyenne National Grasslands and the Sheyenne River Forest. These native features present a great opportunity to provide learning and play opportunities to youth, with the hopes of inspiring the next generation of environmental stewards, while also helping children grow and develop.



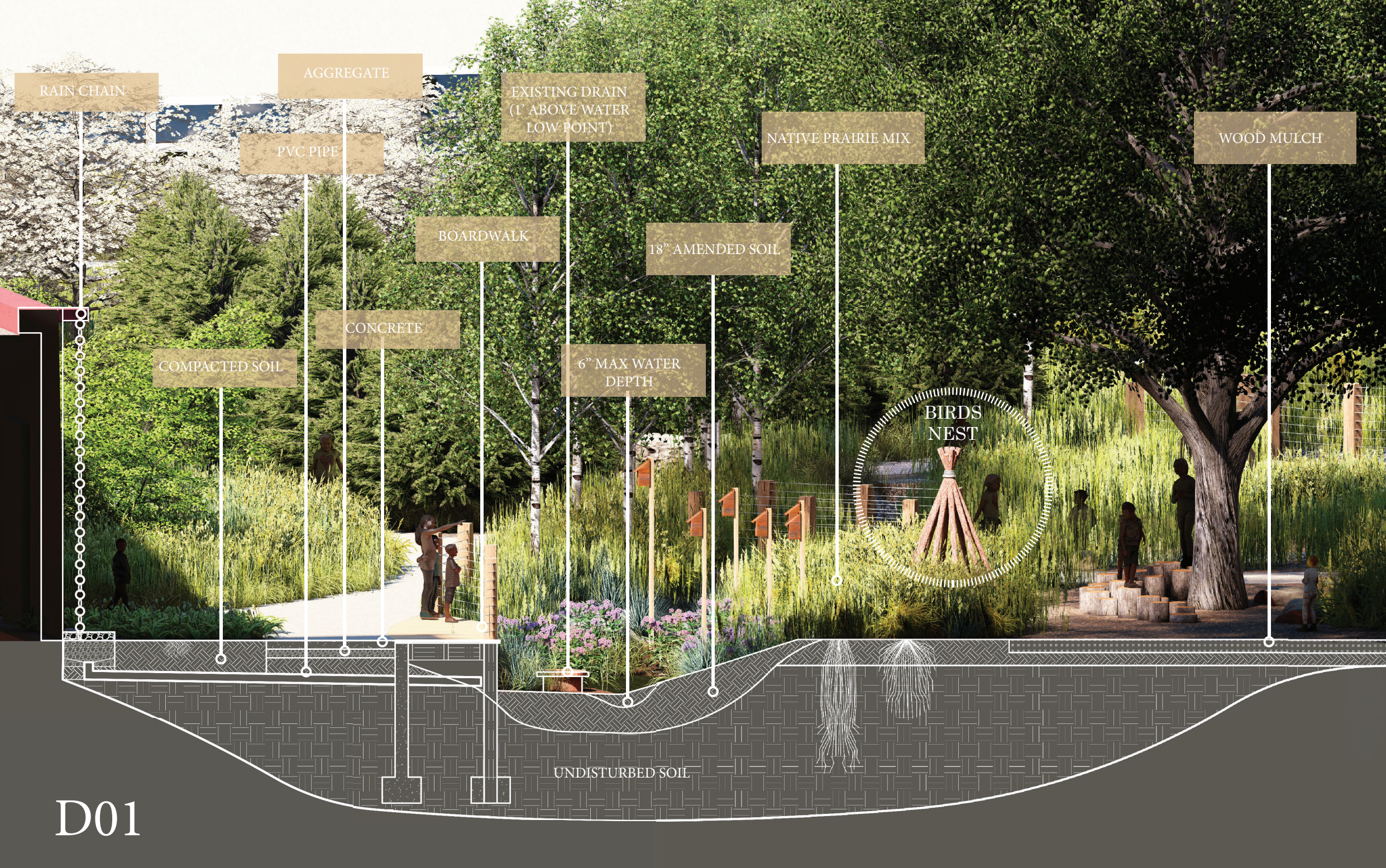
Canyon Cove

Canyon Cove is inspired by the painted canyons found in western North Dakota, where rugged terrain presents exploratory challenges to children, with the intention of benefiting motor-skills and social-emotional development.

OVERCOMING
CHALLENGES TOGETHER

MOTOR SKILL
DEVELOPMENT





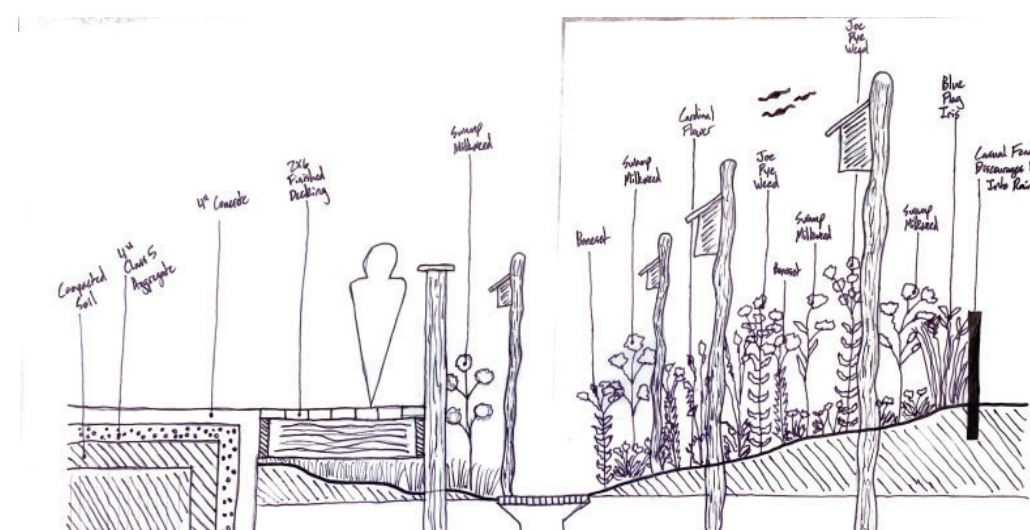
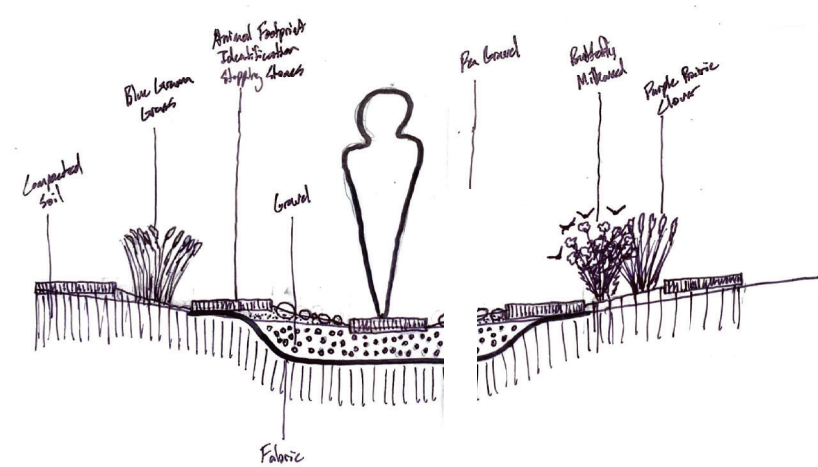
D01

Raingarden Detail

Making Stormwater an Amenity

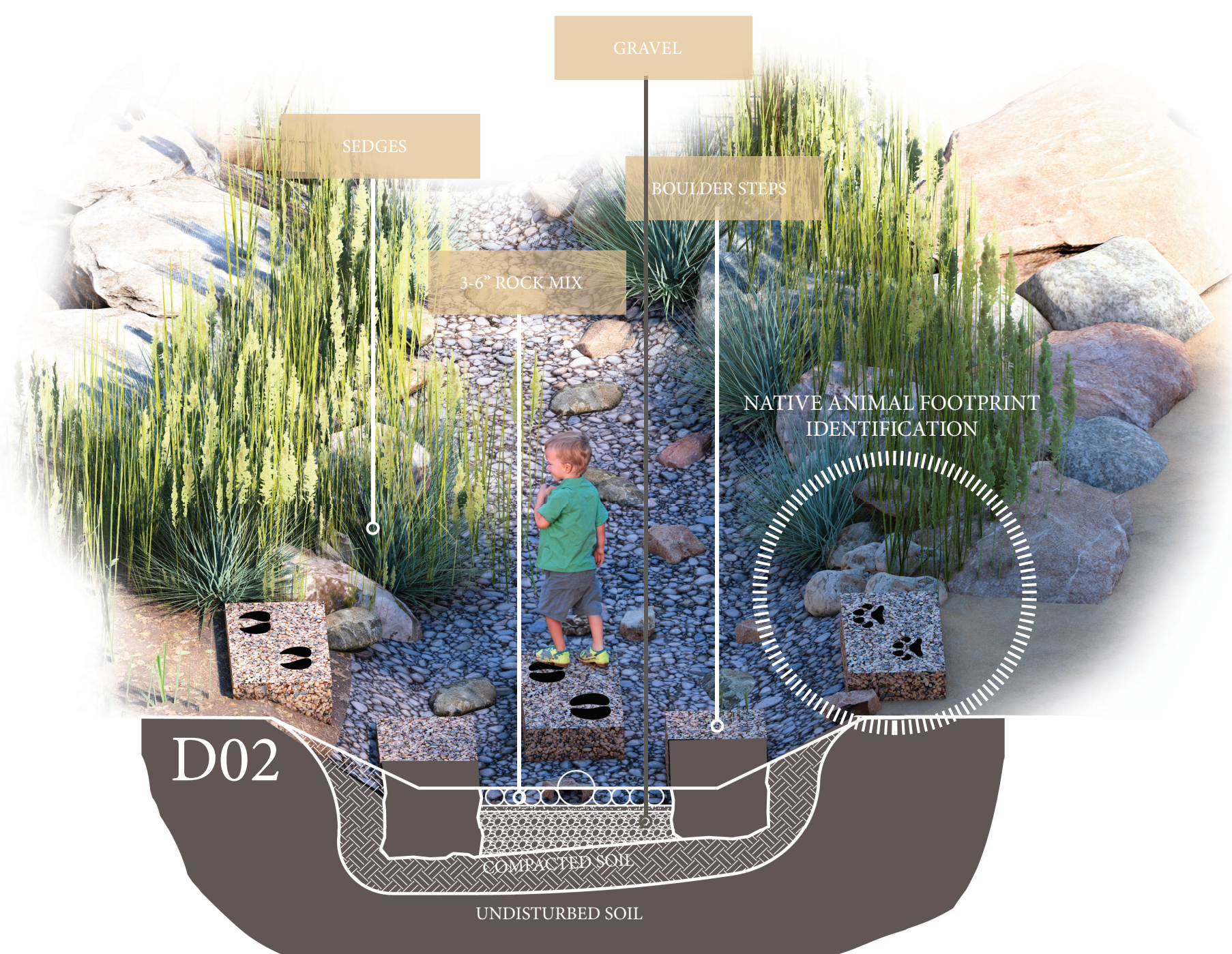
Making Stormwater an Amenity

The rain chain presents a visual appeal that draws curiosity from users. It brings the process stormwater takes off the roof and presents it in an aesthetic way, one that can be interpolated. It eventually reaches the rock pad, where it infiltrates into the PVC pipe, where it is finally transferred to the raingarden. The raingarden offers unique sensory experiences with its vibrant colors, fragrancy, and the local pollinators it attracts. Once the water settles in the raingarden, it infiltrates into the soil within 48 hours. During heavy storms, the existing drain in the raingarden may be activated if water levels exceed 1 foot.



Making Hydrology Visible

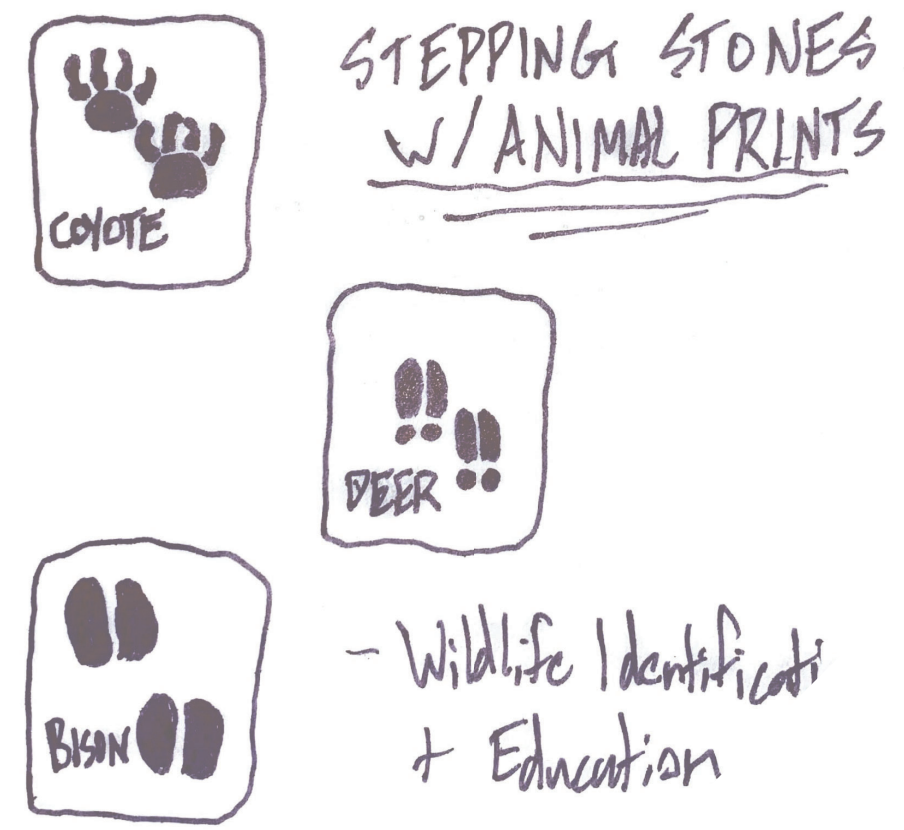
The natural process of hydrology often goes unnoticed within a city, essentially becoming invisible. A majority of city hydrology systems take place underground, making it difficult for people to comprehend the general process of stormwater and the appreciation for it. Over the last 10 years, there has been a growing trend in green stormwater infrastructure systems. It is important to continue that trend, as it allows for the next generation of youth to become educated and engaged in the importance of keeping our waterways clean. By making ecology visible through such features, children can develop a deeper understanding and appreciation for the interconnectedness of nature, fostering a sense of responsibility and stewardship towards the environment.



D02

Learning through Play

Dry Creek Detail



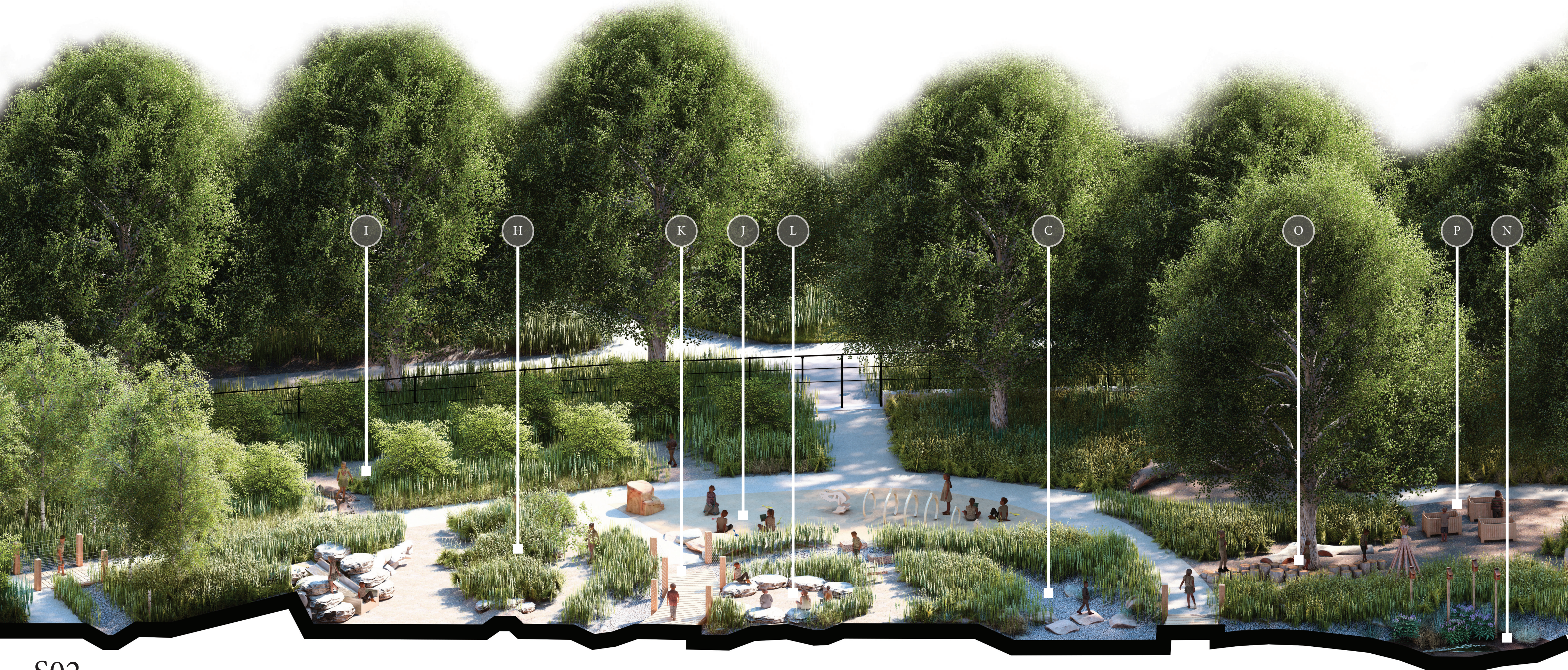
P04

The Prairie Pothole

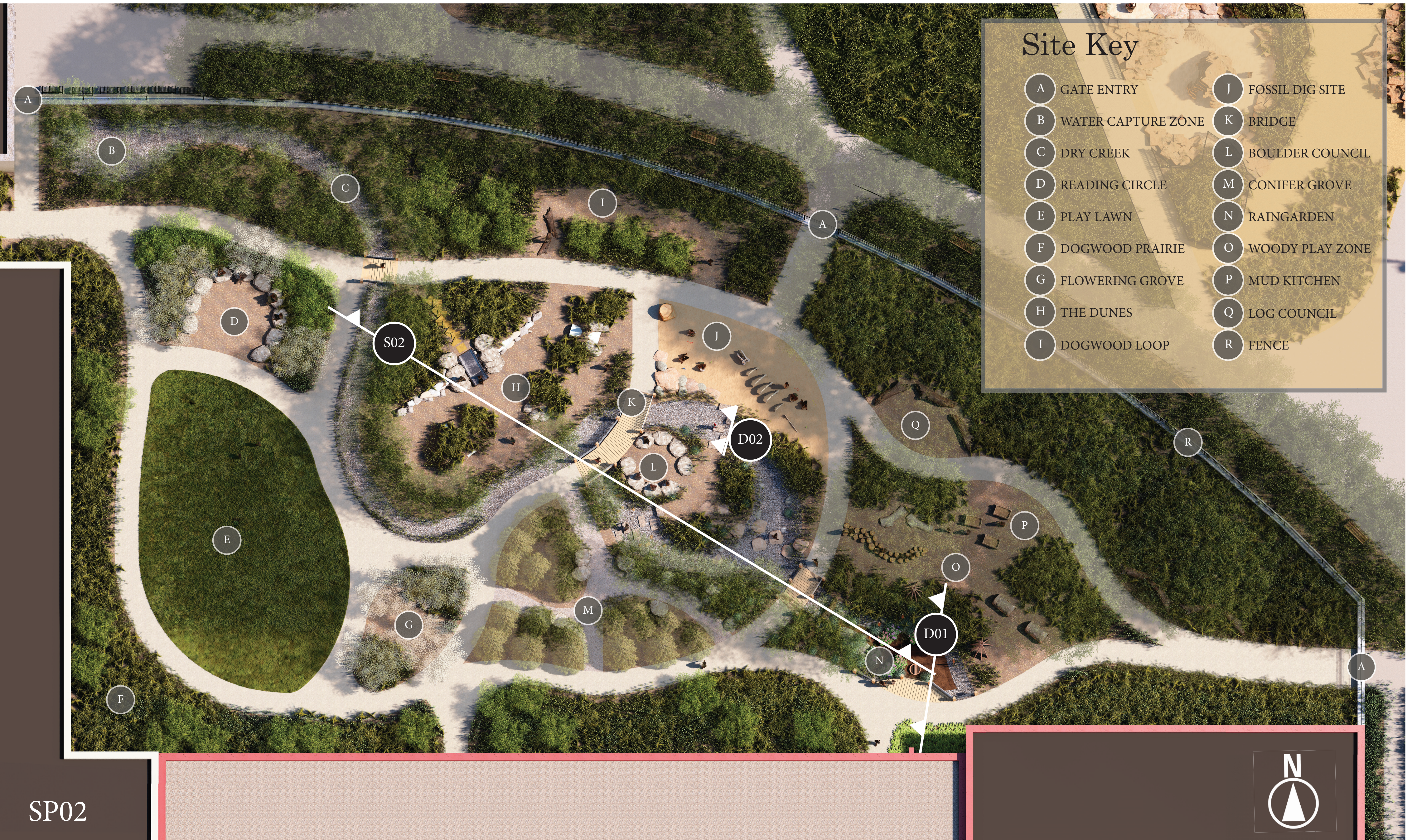
Serves as an amenity for stormwater run-off on the site while also restoring the vegetation and habitat that once dominated the region.

Restoring the Native Ecology

Prairie and wetland ecosystems serve as crucial habitats for diverse plant and animal species, including many that are rare or endangered. By restoring native prairie and wetlands, we can help preserve biodiversity and ensure the survival of these species. Additionally, these ecosystems play a vital role in maintaining the health of the environment by storing carbon, filtering water, and preventing soil erosion. Also, restoring native prairie and wetlands can contribute to mitigating the effects of climate change by sequestering carbon dioxide from the atmosphere. It is important to provide educational opportunities for the next generation of youth, as wetlands and prairie ecosystems have become more endangered.



S02



SP02

Site Key

- A GATE ENTRY
- B WATER CAPTURE ZONE
- C DRY CREEK
- D READING CIRCLE
- E PLAY LAWN
- F DOGWOOD PRAIRIE
- G FLOWERING GROVE
- H THE DUNES
- I DOGWOOD LOOP
- J FOSSIL DIG SITE
- K BRIDGE
- L BOULDER COUNCIL
- M CONIFER GROVE
- N RAINGARDEN
- O WOODY PLAY ZONE
- P MUD KITCHEN
- Q LOG COUNCIL
- R FENCE

Natural exploration area designed for early childhood students at the Community Center

Early Childhood Garden



Nature's Benefit on Youth

Learning and Development:

There are both direct and indirect ways nature benefits learners. Directly, it benefits students by making them more attentive, more engaged, more self-disciplined, and better able to socially connect with one another (Kuo et al., 2019). It also benefits students in an indirect way, by being a more calm, quiet, safer, and more cooperative context for learning, as well as providing developmentally beneficial forms of play (Kuo et al., 2019).

Health and Well-Being

Time spent outdoors is tied to higher levels of physical activity and fitness among youth (Kuo et al., 2019). The more time children spend outdoors, the better their physical activity and health, which ultimately leads to lessened sedentary behavior and improved cardiorespiratory fitness (Kuo et al., 2019). Exposure to natural elements in urban settings helps people recover more quickly from stress compared to similar spaces with no natural elements (Stevenson et al., 2020). Students who participated in outdoor learning in a forest setting once a week showed more favorable diurnal rhythms compared to a group of students who attended indoor classes (Kuo et al., 2019).

Environmental Stewardship

Free play and exploration in nature has been argued as the most important aspect of the curriculum in terms of the youth developing pro-environmental behaviors (Chawla, 2018). Research suggests that contact with nature at a young age is also correlated to higher intellectual curiosity and creative imagination in adulthood (Barrette et al., 2022). Experiences with nature create a greater connection to the natural world, which ultimately leads to responsible behaviors towards the environment from youth into adulthood (Barrette et al., 2022).

Enriching the Senses through Seasonal Experiences

The storybook trail loop offers various children's books throughout the year that relate to the different seasons. The changing of seasons allows children to understand the concept of time and the natural world changing around them. Each season brings distinct changes in weather, temperature, wildlife patterns, and vegetation. The books themselves allow children to enhance their literacy, while creating a connection to nature, ultimately growing an appreciation for the natural world.



P04

Story Book Trails

Enhancing literacy while connecting with nature

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