



CNU Climate and Equity

SUBMISSION

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PROJECT: Greening Milwaukee Public Schoolyards

OVERVIEW

University of Wisconsin (UWM) staff and graduate architecture students work with the non-profit Reflo and Milwaukee Public Schools to convert asphalt schoolyards to outdoor classrooms, green infrastructure, and safe play. Our UWM design center, Community Design Solutions (CDS) plays a vital vision and design role by engaging with teachers, students, and community members about the best strategies to develop greener, healthier spaces. We work with five schools every spring semester, 2023 is our 7th year in the partnership. The overall process, managed by Reflo, moves to construction in year three after a year of fundraising and final design/permitting. The adaptation of the schoolyards is transforming how children learn, has improved attendance and behavior, and benefits the environment. In addition, the schoolyards serve as new community spaces for the surrounding neighborhoods.

EQUITY FOR UNDERSERVED STUDENTS

The projects are part of the Milwaukee Public School district. More than 50% of students at each school come from families that are economically disadvantaged and 15 to 25% of students in each school are part of special education programs. Many of the students have not visited Lake Michigan, therefore experiential learning within the outdoor environment, and working with engineers and graduate students, is expanding their knowledge about opportunities for their future.

As of 2022 21 schools have completed construction with a total of 36 schools enrolled in the multi-year program. Approximately **13,000 students and more than 25,000 community members** (parents, teachers, staff, and neighborhood residents) are impacted on a daily basis.

Associate Professor, Carolyn Esswein, developed the engagement process with Reflo Executive Director, Justin Hegarty. UWM graduate students meet monthly with school "Green Teams" between January and May to collect input about school programming and priorities, participate in design sessions, and review design proposals. The design process includes engaging with the students through interactive design workshops and in-class surveys, educating the students about habitat and how these projects help to keep Lake Michigan and our rivers clean, and gathering feedback from the broader neighborhood surrounding the school.

SUSTAINABILITY IMPACT

The top priority for the schoolyard projects is reducing stormwater runoff, therefore all of the design concepts include a significant amount of de-paving and green infrastructure. Conceptual design is completed for 31 schools, with 21 built and another 5 being constructed this summer. The impacts are substantial for the environment, students, and community for the 31 schools.

- **3,581 trees planted**
- **3,158,000 gallons captured per rain event**
- **36 million gallons of rainwater captured annually**
- **867,000 square feet (nearly 20 acres) asphalt removed**
- **230,000 square feet of native habitat restored**
- **\$25.4 million funds raised for local schools**

Bioswales, trees, native plantings, soccer fields with underground cisterns, mindfulness gardens, and nature play over wood chips are just a few of the installations that are collecting stormwater and transforming how the students interact with the schoolyards and each other. Each project has a minimum of two outdoor classrooms, one with a permanent shade structure and one or two more utilizing trees for shade. The reduced urban heat impact is being monitored by school officials and Medical College of Wisconsin researchers as part of a study showing the impact of the schoolyards on student health, behavior, and learning.

MODEL PROGRAM

Although the multi-year process is similar for each cohort, the design is tailored to the specific site conditions, school needs, and enthusiasm of the school's community. Numerous non-profit organizations work collaboratively to make the designs become a reality, from funding to volunteering. The schoolyard projects go beyond removing pavement to maximize benefits for the community, environment, and learning curriculum.

PROJECT LINK ILLUSTRATING THE PROJECT PROCESS AND BUILT PROJECTS

<https://refloh2o.com/schoolyard-redevelopment-projects>

GREEN SCHOOLYARDS IMPLEMENTED

Partnering with Reflo and Milwaukee Public Schools

WHAT – Conceptual design for converting public schoolyards from asphalt to outdoor classrooms, stormwater management features, and safe play.

INNOVATION TO PRACTICE – Inclusive engagement with school teachers, staff, students, and neighbors to allow the design to reflect the community. Model is replicated for 5 schools each year. SARUP students are connected to practice and eventual construction.

LESSONS LEARNED – Full integration of ideas with the teachers and staff which has influenced curriculum, and is positively impacting student learning, student behavior, and overall student health.

TRANSFORMATION + IMPACTS

31 schools designed, 21 implemented or under construction

Design concepts are key to public understanding and fundraising

Reduced flooding onsite for safer play and environmental benefits

Outdoor classrooms are connecting students to nature

Engagement and selected school implementation on the following pages.



GREEN SCHOOLYARDS ENGAGEMENT

Community Design Solutions staff (UWM graduate students) work with Reflo staff at all engagement sessions.

Charettes with students, teachers, staff, and community members

Community Open House to gather input on proposed schoolyard designs

Monthly "Green Team" meetings with school teachers and staff



GREEN SCHOOLYARDS Implemented

Original design concepts by Community Design Solutions



Hawley Environmental





Clement Avenue School



Starms Elementary



Longfellow

