

SUSTAINABLE
LANDSCAPE FOR
AFFORDABLE
HOUSING

College Drive Townhouses

PROJECT TEAM:

- Great River Greening
- The College Drive Limited Partnership
- Crow Wing County Extension Service
- Crow Wing County Soil and Water Conservation District

FUNDING

PARTNERS:

- The College Drive Limited Partnership
- Home Depot Foundation

SITE AREA:

- three-acre site

PROJECT SCOPE:

- 24 low-income units, 4 of which are designated for long-term homelessness.

SUSTAINABLE

PRACTICES:

- Turf Reduction
- Bioretention
- Native Plantings

COSTS:

- Installation \$19,000
- Yearly Maintenance After Establishment \$1,500 (approx.)



SITE DESCRIPTION

The property was constructed in 1983 on the western slope of the Mississippi River Valley in Brainerd, MN. Its location within the river valley meant that stormwater running off the site was picking up pollutants that flowed directly into the river without any pretreatment.



The College Drive Limited Partnership acquired the property with the intention of renovating the site to create a sustainable living environment for the residents. This included retrofitting all existing structures with energy-efficient lighting and mechanical systems, as well as addressing the site's stormwater needs. The units were connected to geothermal heating and cooling system as well as remodeled with sustainable products.

OBJECTIVES

- A Reduce impacts of stormwater run-off on the local municipality and the Mississippi River.
 - Create spaces for stormwater to slow down and infiltrate
 - Create vegetated overflow areas that continue to filter water before entering the municipal stormwater system.
- A Plant native vegetation and limit the amount of turf grass to active use areas to enhance infiltration and reduce long-term maintenance.
- A Use a native plant palette suitable to the site's demands and location within an urban area.
- A Remove invasive plant species and replace where appropriate with a comparable alternative.

DESIGN

Project partners walked the site and discussed goals, expectations, and concerns. A preliminary concept plan was drawn up and distributed via email for comments and feedback. A final design set was based on feedback. The treatment of stormwater and turf conversion was combined to create a unified landscape providing both water treatment and habitat. The finished design serves as a working example in the Brainerd area of a sustainable landscape for larger property owners.

The design looks at treating stormwater runoff onsite through the use of raingarden networks and infiltration swales. Due to the sandy site soils and their high infiltration rate, the objective was to treat a minimum of a 2.25", 24 hour rainfall event.

The sandy nature of the soil also posed a problem to establishing and maintaining turf grass. Areas of low use were looked at to be converted to prairie. Initial analysis of the site suggested converting 1/3 of the 3 acre site to a natural planting. This will cut down on the amount of lawn maintenance needed to keep turf alive in those areas where it is struggling, thus reducing carbon emissions, watering, and fertilizing. Currently on the adjacent property uphill there are prairie species growing and thriving.



Blue Lobelia



Prairie Blazing Star



Cardinal Flower



Prairie Smoke

CHALLENGES

A Sandy Soils

The existing sandy soils on the site made it difficult to maintain a healthy turf grass cover. This same soil created a challenge to establishing the rain gardens since the soil drains too efficiently and dries out. Adding compost to the soil was required to hold moisture in the soil for a longer duration for the plants to uptake.

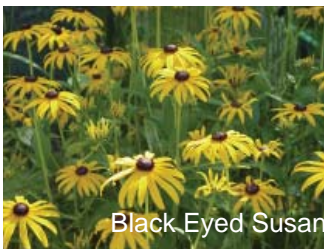
A Site Drainage

All stormwater from the three parking lots was concentrated through a single outlet in each parking lot area. This caused channelized flow to leave the parking lots. To address this the inlets were armored with rip-rap and several check dams were installed to slow the water down and allow it to infiltrate.

A Design budget

The budget for the landscape design was tight so the design was kept simple and adhered very closely to what The College Drive Limited Partnership envisioned. The plant species list was kept simple and for the seeded area it was kept to standardized lists available from native seed vendors.

PROJECT SITE PLAN



Great River Greening
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Saint Paul, MN 55107
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651.665.9500

*restoring the land,
renewing communities*

A Landscape Contractors

When collecting bids for the installation of the landscape improvements from traditional landscape contractors, bids came in with extras not needed for native plant establishment. These extras included the application of fertilizer to all installed plants and seeded areas. Also included in bids was the addition of two inches of topsoil to all seeded areas. These nonessential items and services required educating the contractors of what was needed with a native plant installation and having bids resubmitted.

CONTACT INFORMATION

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LESSONS LEARNED

- A Include in the design all standard procedures for proper installation and maintenance as would be completed by a native restoration company.