

SUSTAINABLE
LANDSCAPE FOR
AFFORDABLE
HOUSING

Park Avenue Apartments

PROJECT TEAM:

- Great River Greening
- Urban Homeworks

FUNDING

PARTNERS:

- Home Depot Foundation
- Hennepin Conservation District
- Minnehaha Creek Watershed District
- Urban Homeworks

SITE AREA:

- 1/4-acre urban lot

PROJECT SCOPE:

- 4 three-bedroom low-income unit building on an urban lot.

SUSTAINABLE

PRACTICES:

- Native Planting
- Turf Conversion
- Rain Garden
- Permeable Patio
- Tree Placement

COST:

- Installation \$22,500
- Yearly Maintenance After Establishment \$1,000 (approx)



SITE DESCRIPTION

The building consists of 4 three-bedroom low-income units on two floors. The lot is a moderately sized 1/4-acre urban site. Approximately 1/3 of the site was impermeable surface and 2/3 turf grass.

100% of the paved and building surface drained directly to the street with no treatment through a down-spout outlet to the driveway. The site is located on a busy northbound thoroughfare with several bus lines within walking distance.



Front yard after planting event June 2008

OBJECTIVES

- A Create usable outdoor spaces for the residents.
- A Create outdoor spaces that residents can occupy and that bring residents together as neighbors in an environment that feels and is safe.
- A Use a simple palette of native plants that is easily maintained and provides a clear design intent.
- A Use a native plant palette that integrates into the urban fabric.
- A Use native plant materials to reduce energy by: (a) Locating trees to reduce summer cooling costs and improve indoor outdoor comfort; (b) Locating trees so that winter heating costs are not increased.
- A Use native plant material to reduce stormwater impacts to urban watershed to include: (a) Installation of a rain garden to capture and treat runoff from building; (b) Infiltration techniques to capture water flowing from turf areas prior to leaving site.
- A Onsite infiltration techniques:
- A Reduce stormwater utility fees from City of Minneapolis.
- A Ensure that this site is not contributing to larger stormwater problems (erosion, flooding, etc.).
- A Engage volunteers and youth.

DESIGN

The guiding idea behind the design is to capture and treat as much stormwater on site while creating a working model of a sustainable landscape in the city. In addition to treating stormwater on site, other goals are to reduce pollution, energy use, and water use required to maintain turf grass.

Great River Greening proposed a stormwater system that relies on the current building outlet being captured in a basin and routed through drain tile into a rain garden as part of the redesigned backyard. The rain garden area was sized to capture and treat a minimum of the first 1.5" of stormwater. Due to the sandy soils on site, this was not a problem. The rain garden was planted with a variety of native plants and grasses that would give year-round interest to the area.



Rain garden planting with volunteers

Trees were planted in rows across the front and back of the properties to help shade the building during the summer. In areas where turf was hard to manage, native plantings were installed. This includes a native grass planting on the south and west slopes of the property, as well as along the north property line.

The plan also proposed the installation of a permeable unit paver patio using “off the shelf” pavers, demonstrating stormwater treatment and residential amenities using affordable materials available to any homeowner. The pavers used were a combination of standard 4”x8” and 4³/₄”x6” sizes. The pavers were laid in two different patterns to create openings to let water percolate down into the soil. The spaces were filled with a small angular granite.

With all the multiple practices being installed it was also important to keep some areas turf for active use by the residents. This was accomplished in both the front and backyard.

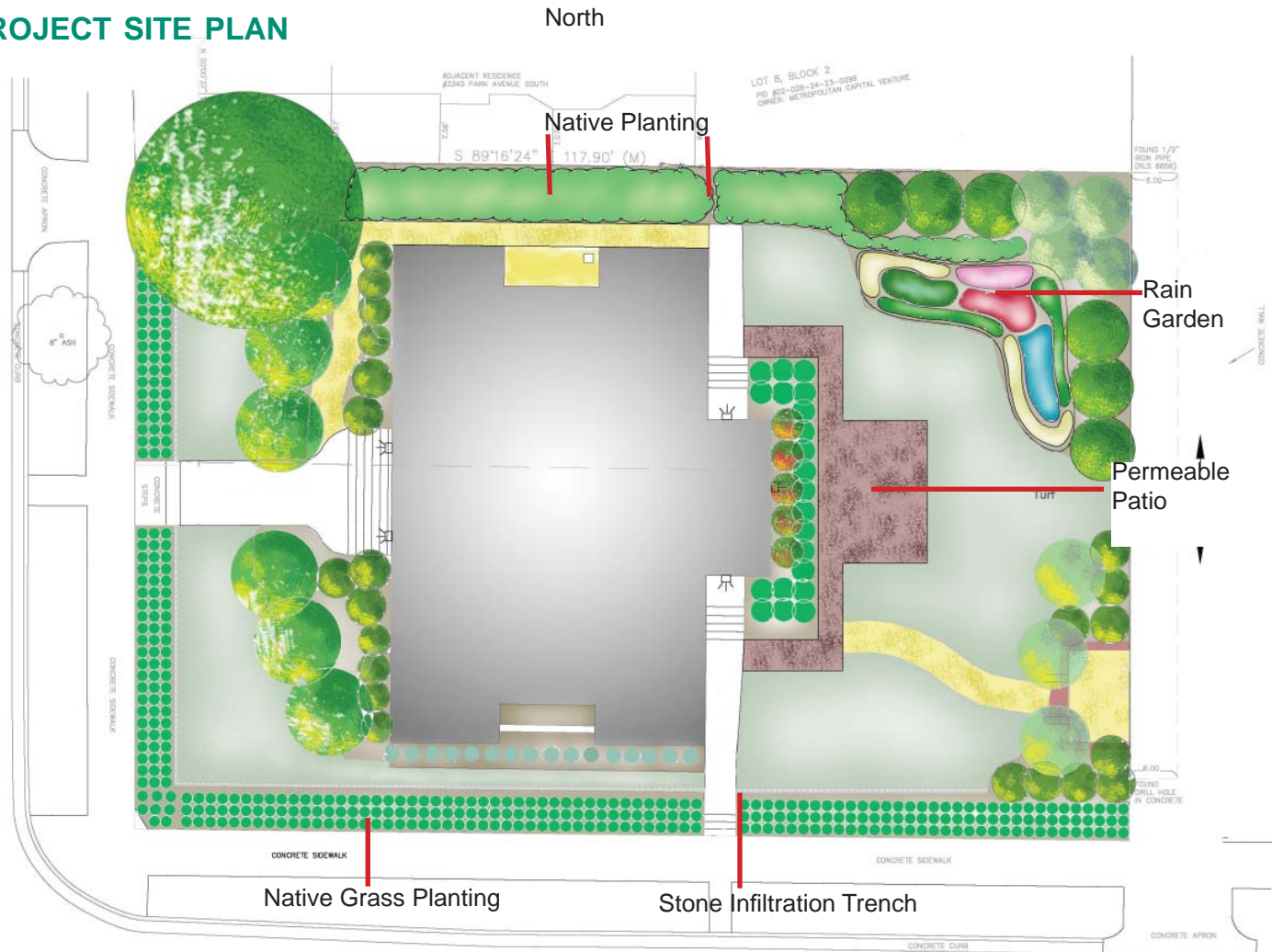


Permeable paver patio installation



Volunteers planting native grass planting

PROJECT SITE PLAN



CHALLENGES

A Current Zoning Codes.

By installing a full-scale landscape retrofit the plan had to go through the City of Minneapolis Planning and Zoning. This triggered having to update the site to comply with current zoning codes. The main issue was the non-conforming single car driveway on the north side of the building. Compliance required either one stall per unit or that all parking needed to be on the street. To lessen the need for additional impervious surface, the solution was to remove the driveway, grade out the land, and plant the area with native vegetation.

A Storing Installation Materials.

All material had to be stored onsite while the installation was progressing. Because of the limited amount of on-street parking, all material if placed in the street had to be moved by the end of the day. This required working closely with suppliers and letting them know the constraints of the site. Deliveries were made early in the morning so volunteers and staff had the day to move material into place.

A **Youth Vandalism.**

Over the course of a weekend several trees were snapped off. Staff and supervisors continued to engage and educate the youth over the last couple days of the installation, despite the tree damage, so they would have a better understanding of the project as well as be invested in the property.

A **Post-Planting Follow-up.**

Additional funding and volunteers were needed to replant the slope on the south and west of the property due to a crab grass infestation. After the replanting a local master gardener volunteered to check in on the site once a week to weed and water, as well as keep Urban Homeworks informed of any problems with plants.

CONTACT INFORMATION

Great River Greening
Wayne Ostlie - Conservation Director
35 West Water Street, Suite 201
Saint Paul, MN 55107
651.665.9500
wostlie@greatrivergreening.org
www.greatrivergreening.org

LESSONS LEARNED

- A It is vital to educate the property managers on watering newly established plants and the need for ongoing maintenance until plants establish.
- A Planning review process by the city can be costly and timely without any prior knowledge of the process or acceptable conditions. The city planning and zoning department was helpful in giving advice on what needed to be changed and how to go about it.
- A Plans may need to be altered to accommodate youth. This might mean installing the project in phases so the whole landscape is not transformed immediately to installing larger more mature tree and plant stock.