Common Ground Meditation Center
Storm Water Management Improvement Project

Community Education Event – in conjunction with the Generosity Festival
September 24, 2011, 11:00 AM – 3:00 PM

Last year, Common Ground Meditation Center was granted funding from the Mississippi Watershed Management Organization (MWMO) to assist us in making site improvements that would increase green space on the Common Ground site, which would also benefit the Mississippi River by decreasing impervious surfaces, reducing runoff and pollutant generation; and increasing infiltration. In addition, the overall garden plan provides diverse plantings, with an emphasis on use of native plants, especially in the rain gardens.

The following pages provide additional information on the site concept plan and features. The Site Plan (see Page 2) shows the physical features of the proposed project, which include:

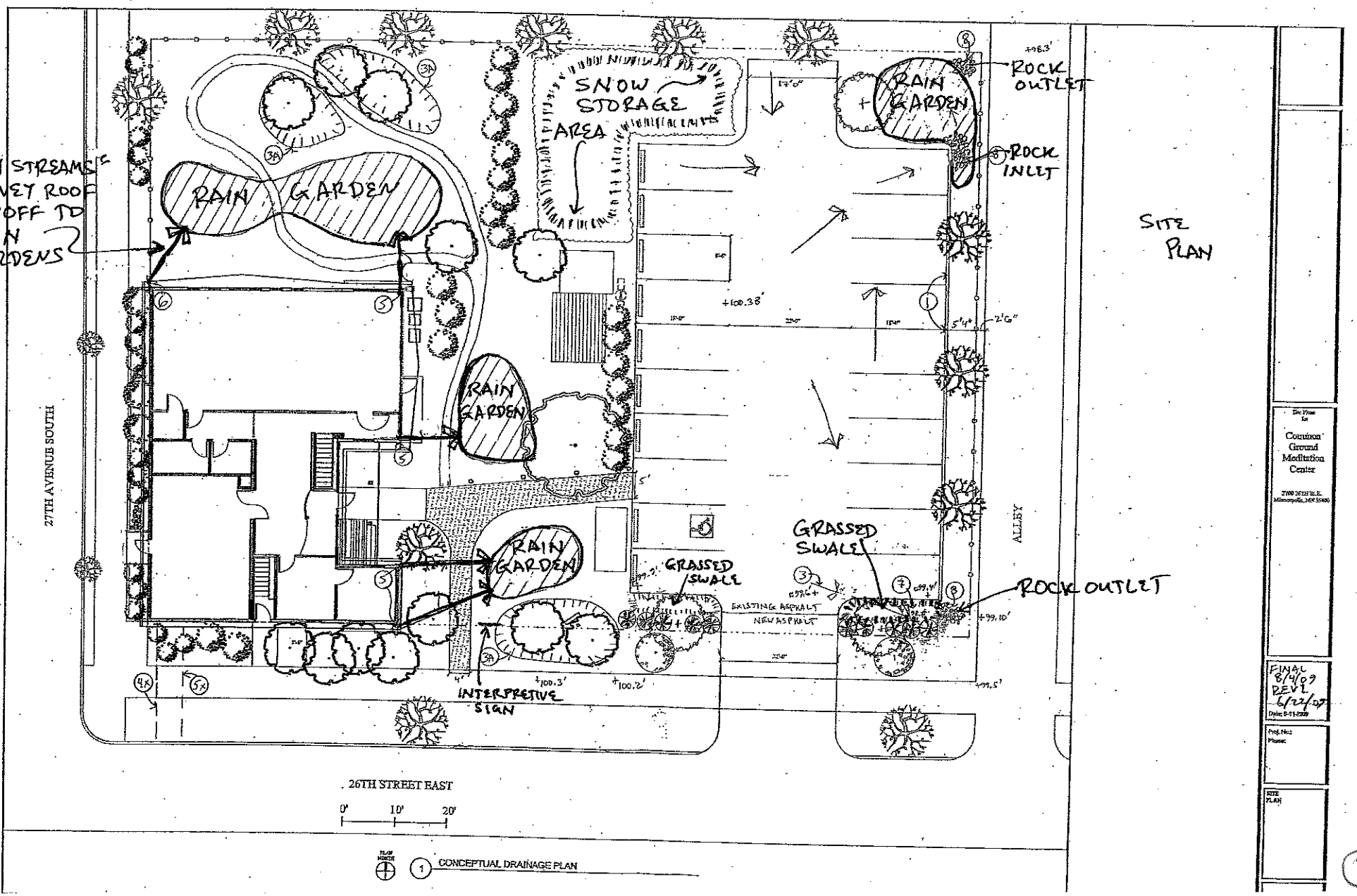
- Reducing impervious surfaces on the 17,374 sf property by 6,689 sf [from 15,261 sf (87.7% of property) to 8,572 sf, including the building roof (49.3% of the property)]. This reduction in impervious surface (achieved by removing approximately half of the parking area and driveway pavement) reduces runoff volumes and discharge rates, compared to the previous site plan.
- Conveying all of the building roof runoff to three rain gardens totaling approximately 1,000 sf, to promote infiltration and decrease site runoff. (see pages 3-4 for more information on rain gardens)
- Use of dry stream beds to convey water from the downspouts to the rain gardens, to raise garden visitors' awareness of the movement of water on the site.
- Landscaping the site primarily with native plant species, including rain gardens, and using a 'No Mow' fine fescue lawn mix for the new low-traffic turf areas to decrease turf watering needs. (see page 5 for more information of the benefits of planting native species and low mow grasses)
- Treating parking lot runoff (that previously drained, untreated, to the storm drain in the alley) by creating 1)a [60 sf] grassed swale that would filter runoff flowing south prior to leaving the site and 2) a 315 sf rain garden at the northeast corner of the lot to detain/infiltrate storm water runoff flowing to the north.

We encourage you to read more about the site concept plan features on the following pages, and think about trying some of these features in your own home garden.

Common Ground is grateful to the
Mississippi Watershed Management Organization
for generously providing funding assistance for the
removal of impervious pavement; site grading and soil improvement;
and construction of rain gardens
and other storm water best management practices.

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION


DRY STREAMS TO CONVEY ROOF RUNOFF TO RAIN GARDENS
RAIN GARDEN
SNOW STORAGE AREA
RAIN GARDEN
ROCK OUTLET
ROCK INLET
SITE PLAN
RAIN GARDEN
RAIN GARDEN
GRASSED SWALE
GRASSED SWALE
ROCK OUTLET
INTERPRETIVE SIGN
27TH AVENUE SOUTH
ALLEY
26TH STREET EAST
EXISTING ASPHALT
NEW ASPHALT
+100.38'
+100.3'
+100.2'
+99.10'
+99.5'
0'
10'
20'
Common Ground Meditation Center
FINAL 8/4/09 REVL 6/22/09
SITE PLAN
1 CONCEPTUAL DRAINAGE PLAN
2

THE STORMWATER CHALLENGE

What happens when it rains?

In planted landscapes rain soaks into the ground. But when rain falls onto roofs, roads, driveways and other hard surfaces, it cannot infiltrate. In most neighborhoods this rainwater runoff is directed into storm sewers. From there it makes its way to a nearby stream, wetland, pond, or lake—untreated!

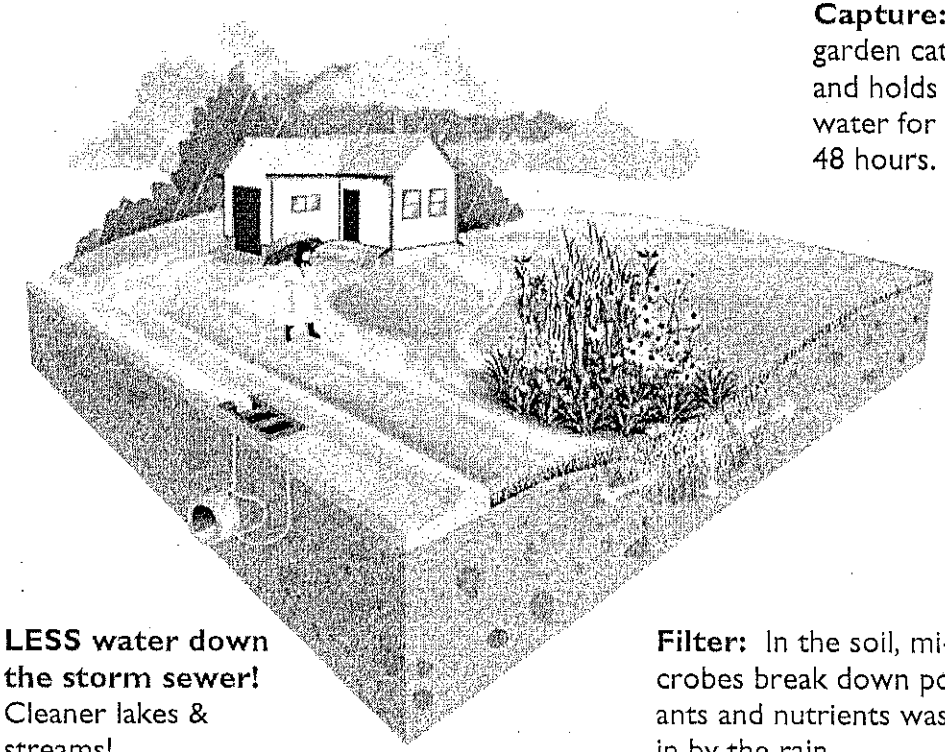
What's wrong with sending stormwater down the storm sewer?

- Stormwater pollutes local waters. Most runoff is not treated. It goes directly into local lakes and streams carrying pollutants like soil, fertilizers, pesticides, oil, soap, litter, organic matter, and pet feces.
- Stormwater runoff in our lakes causes turbid water, sediment buildup and contributes to algae blooms. It can impact health of aquatic plants and animals. Poor water quality in lakes also affects aesthetics and recreation.
- Sending rainwater out of the neighborhood contributes to flooding downstream.
- Rainwater needs to soak in near where it falls so it can help recharge groundwater aquifers.

from: http://mn-maplewood.civicplus.com

WHAT IS A RAIN GARDEN?

A rain garden is a depression in the landscape, that is planted like a garden, collects rainwater runoff, and allows it to infiltrate.

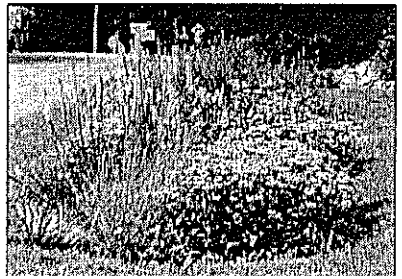


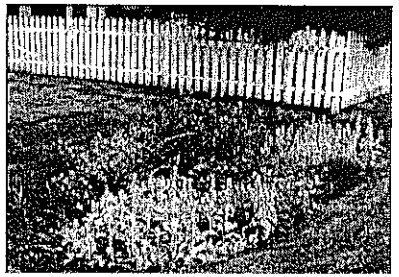
Capture: A rain garden catches runoff and holds standing water for no more than 48 hours.

Soak: Deep-rooted plants loosen the soil, creating a sponge zone. Water soaks in and groundwater aquifers are recharged.

LESS water down the storm sewer! Cleaner lakes & streams!

Filter: In the soil, microbes break down pollutants and nutrients washed in by the rain.





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RAIN GARDENS

Your personal contribution to cleaner water

Homeowners in many part of the country are catching on to rain gardens – landscaped areas planted to wild flowers and other native vegetation that soak up rain water, mainly from the roof of a house or other building. The rain garden fills with a few inches of water after a storm and the water slowly filters into the ground rather than running off to a storm drain. Compared to a conventional patch of lawn, a rain garden allows about 30% more water to soak into the ground.

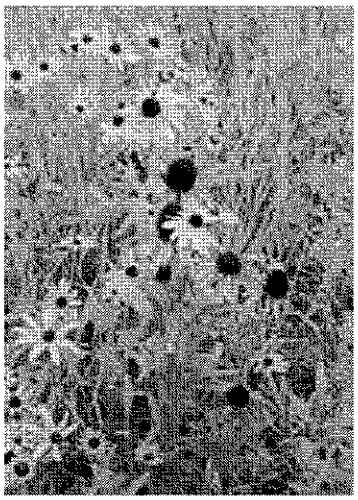
Why are rain gardens important? As cities and suburbs grow and replace forests and agricultural land, increased stormwater runoff from impervious surfaces becomes a problem. Stormwater runoff from developed areas increases flooding; carries pollutants from streets, parking lots and even lawns into local streams and lakes; and leads to costly municipal improvements in stormwater treatment structures.

By reducing stormwater runoff, rain gardens can be a valuable part of changing these trends. While an individual rain garden may seem like a small thing, collectively they produce substantial neighborhood and community environmental benefits. Rain gardens work for us in several ways:

- Increasing the amount of water that filters into the ground, which recharges local and regional aquifers;
- Helping protect communities from flooding and drainage problems;
- Helping protect streams and lakes from pollutants carried by urban stormwater – lawn fertilizers and pesticides, oil and other fluids that leak from cars, and numerous harmful substances that wash off roofs and paved areas;
- Enhancing the beauty of yards and neighborhoods;
- Providing valuable habitat for birds, butterflies and many beneficial insects.

from: Wisconsin DNR publication:
"Rain Gardens: A How-to Manual for Homeowners"
http://dnr.wi.gov/runoff/pdf/rg/rgmanual.pdf

Native Plants



Native plants in rain gardens and in landscaping in general are preferred because they are best adapted to soil and temperature conditions in a particular area. Because they have adapted to local conditions, native plants often require less fertilizer and watering than exotic species. Once established native plants are resistant to most pests and diseases. Also, native plants provide the food and shelter of native animals.
In regions with heavy clay soil, deep rooted native plants can break-up the soil better than typical varieties of lawn grass and improve clay soil's permeability.

Source: Raingarden Network
http://www.raingardennetwork.com/nativeplants.htm

Low Mow/Low Maintenance Lawns

Low maintenance lawns typically contain plants such as creeping red fescue, chewing fescues, hard fescue or some of the common types of Kentucky bluegrass that grow and spread more slowly than those found in high maintenance lawns. Once established, these low maintenance lawns do not commonly receive watering (other than rainfall) during the summer months and grass growth is minimal during hot, dry periods. Clippings are usually left on the lawns.

Mowing frequency depends on how you'd like the lawn to look. It can be mowed to about four inches in height when the seed heads form in late spring. Then it can be mowed monthly, or simply left alone. It should not grow much taller than about six inches, and depending on which mix is used, the grasses will often bend gracefully, presenting a relatively low profile.

A low maintenance lawn will typically require, at most, 1 to 2 pounds of nitrogen per 1,000 sf of lawn per year (compared to 3 to 4 pounds per 1,000 sf for high maintenance lawns). Preferably a slow-release nitrogen fertilizer should be used, to avoid excessive growth.

Other nearby Rain Gardens and/or Storm Water Improvement Installations you might want to visit……

Name/Address	Description
Seward Co-op 2823 E. Franklin Avenue Minneapolis	2009 Grant from MWMO Raingardens for roof and parking Interpretive sign
Hiawatha Commons 2740 E. 28th Street (1 block north of Lake St) Minneapolis	Infiltration swale at front parking lot and back of building (near RR tracks)
Seward Redesign 2619 E. Franklin Avenue Minneapolis	Stormwater infiltration garden
7 Sigma 2843 26th Avenue S Minneapolis	Raingardens
Holy Trinity Lutheran Church 2730 E 31st Street Minneapolis	2010 Grant from MWMO Raingardens and dry creek beds
Numerous residences in the Seward and Longfellow neighborhoods	Raingardens
Coming Soon:	
Seward Child Care Center 2323 32nd Avenue Minneapolis	2011 Grant from MWMO Living wall, pervious pavers and cistern
Peace Coffee 3262 Minnehaha Avenue Minneapolis	Fall 2011 installation planned -- raingardens