

LANDOWNER: Rolf & Phoebe Nelson  
LOCATION:  
LANDSCAPER: St. Croix Valley Landscaping



PROJECTS:

- NO-MOW GRASS
- HILLSIDE GARDEN
- NATIVE PLANTINGS
- RAIN INFILTRATION SYSTEM
- NATIVE SHORELINE PLANTINGS

PROJECT: No-mow Grass

AREA: 2,700 square feet

COST: \$540



ISSUE: The yard on the lake side of the residence is steep, sandy, and shaded. Despite numerous attempts to stabilize the hillside with lawn grasses, the result is always sparse growth and exposed patches of soil. Foot traffic and lawn mowing compact the soil and further aggravate the problem.

SOLUTION: The existing lawn grasses were eliminated via herbicide, and the area was raked and then reseeded with no-mow grass. This mix of fine fescues has a much deeper root system than most lawn grasses, and will therefore better stabilize the soil on the hillside. It is relatively slow growing and will only reach a height of four to six inches. As a result, mowing is only necessary a few times per summer. Once seeded, a straw blanket was placed over the area to keep the grass seed in place and encourage its growth.

BEFORE



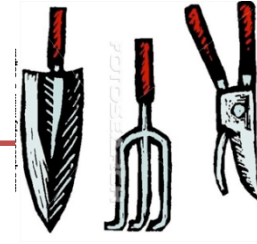
AFTER



PROJECT: Hillside Garden

AREA: 640 square feet

COST: 1,920



ISSUE: A mulched, rock-lined garden was installed on the hillside, but was having minimal success. With its steep slope and slippery landscaping fabric, the garden's mulch would be washed downhill with heavy rains, and the plants were seeing little growth.

SOLUTION: The impermeable landscaping fabric was removed to eliminate the slipperiness on the slope. The exotic plants in the garden were removed and replaced with native perennial species appropriate to the site and its conditions. Soil type, moisture conditions and exposure to sunlight were all considered when compiling the plant list. Not only are these native species better adapted to the climate in this region, but they are part of the local ecosystems. This means they will require minimal maintenance from the landowners, and provide habitat for wildlife such as bird, butterflies, and other important pollinators. The plants' deep root systems will also stabilize the soil to prevent erosion and increase infiltration. The existing boulders and grasses in the garden were rearranged, and then mulch was added to retain moisture and discourage weed growth.

BEFORE



AFTER



PROJECT: Fire Hydrant Planting

AREA: 160 square feet

COST: \$320



ISSUE: This area of the yard was relatively bare. Following rain events, significant amounts of water would wash over this area, causing erosion and preventing the establishment of native vegetation. Only hardy, exotic species were able to grow here.

SOLUTION: The site was prepared by applying herbicide to remove the unwanted plant species. A combination of hardy shrubs and native perennial species were then planted according to the specific conditions of the site. These species should be able to stabilize the soil and encourage infiltration of the surface runoff via their deep root systems. Mulch on the surface will act to further protect the soil and encourage the absorption of water.

BEFORE



AFTER



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PROJECT: Rain Infiltration System

AREA: 240 square feet (2,500 gallon holding capacity)

COST: \$3,250



ISSUE: The garage, driveway, parking area, and boat access road are all impervious surfaces that do not allow water to soak into the ground. All the rain that falls on these sizable impervious surfaces therefore flows over the surface. Gravity directs it downhill, which means that it all flows down the boat access road and towards the lake.

SOLUTION: A rain infiltration system was installed in the parking area. In addition to the rain that falls in this area, it collects water that flows down from the driveway as well as water piped from the garage's downspouts. The site was first excavated to remove the displaced sediment. The infiltration system was then installed in a series of layers (see diagram below). The base layer is a geo grid—a polymer structure with large openings that are filled with soil or aggregate. This stabilizes the structure and also increases its load-bearing capacity. The geogrid is followed by a support structure made of vertical pipe sections. This provides the system's stability as well as its water storage capacity. A 3/8-inch plastic grid goes on top of the support structure, followed by two layers of clean, crushed trap rock. The lower layer is comprised of rocks between 3 and 6 inches in diameter to create some water storage capacity and better facilitate the downward flow of water. On the surface the rocks are only 3/4-inch in diameter to allow cars to drive over and park in this area. This rain infiltration system can also be fitted with rainwater storage and a pump system so the water collected can be used for irrigation instead of simply infiltrating the soil underneath.

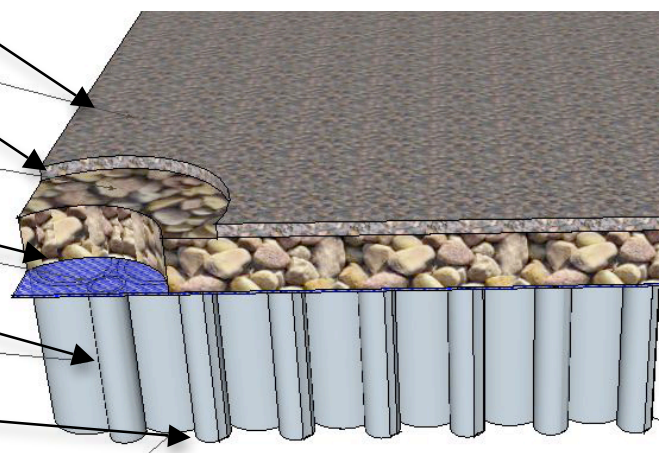
3/4-INCH CLEAN TRAP ROCK

3 TO 6-INCH CLEAN TRAP ROCK

3/8-INCH PLASTIC GRID

SUPPORT PIPE STRUCTURE

GEOGRID







PROJECT: Native Shoreline Plantings  
AREA: 976 square feet  
COST: \$1,220



ISSUE: Since the residence is located on a peninsula, there is a significant amount of shoreline on the property. The central portion of the shoreline is dedicated to swimming, the dock, the boathouse, and a viewing corridor. Much of the shoreline on either side has been left to grow naturally, but many invasive species have taken over. Additionally, many waves break on the point because of its prominent location in the lake. Erosion of the shoreline is therefore a concern as well.

SOLUTION: An herbicide was used to remove the non-native species that are currently in place. Since chemical herbicides are non-selective, all vegetation was necessarily removed. Native plants were then planted. Their root systems should hold the soil in place to better stabilize the shoreline. They will also provide habitat for wildlife such as frogs and birds.

