CAYUGA LAKE TRAIL HEAD PARKING LOT:
USING TREES, POROUS ASPHALT & CU STRUCTURAL SOIL TO MITIGATE STORMWATER

Summary

The basis for this research was to combine the proven benefits of CU Structural soil with a porous asphalt pavement and trees to mitigate stormwater runoff. In this way, the porous asphalt reservoir and the trees become an active part of the stormwater mitigation system.

Approach

The space alotted for the parking lot was divided into half with one half receiving a traditional asphalt surface and the second half receiving a porous asphalt treatment. Both surfaces were installed on 3' of CU Structural Soil. Tree pits 3' wide x 15' long were saw cut into the middle of each asphalt treatment and hybrid Accolade elm trees planted in each tree pit as well as around the perimeter of the lot. Peizometer monitoring wells were installed within each type of asphalt profile to monitor conditions below ground.

Current/Future Work

Work will evaluate and assess whether or not growth rates differ for treesplanted in each profile. Research tasks to determine this hypothesis include:

Seasonal shoot growth measurements for each tree
Peizometer water level measurements
DBH measurements to determine seasonal tree growth
Leaf evaporation measurements for each tree

a.

b.

c.

d.

e.

a. Dumping lifts of CU Structural Soil
b. Spreading lifts of CU Structural Soil for compaction
c. Students planting trees in parking lot planters
d. Porous asphalt section of parking lot after all installation activities have been completed
e. Parking lot during a rain event with traditional asphalt surface in foreground and porous asphalt surface in background