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Examples of Green Infrastructure in North Carolina

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www.bae.ncsu.edu/stormwater

NC STATE UNIVERSITY Bio&Ag ENGINEERING

Post Construction – Aquatic Shelf is Typical

NC Museum of Art – Wet Pond with Aquatic Shelves

Designed for Human Interaction

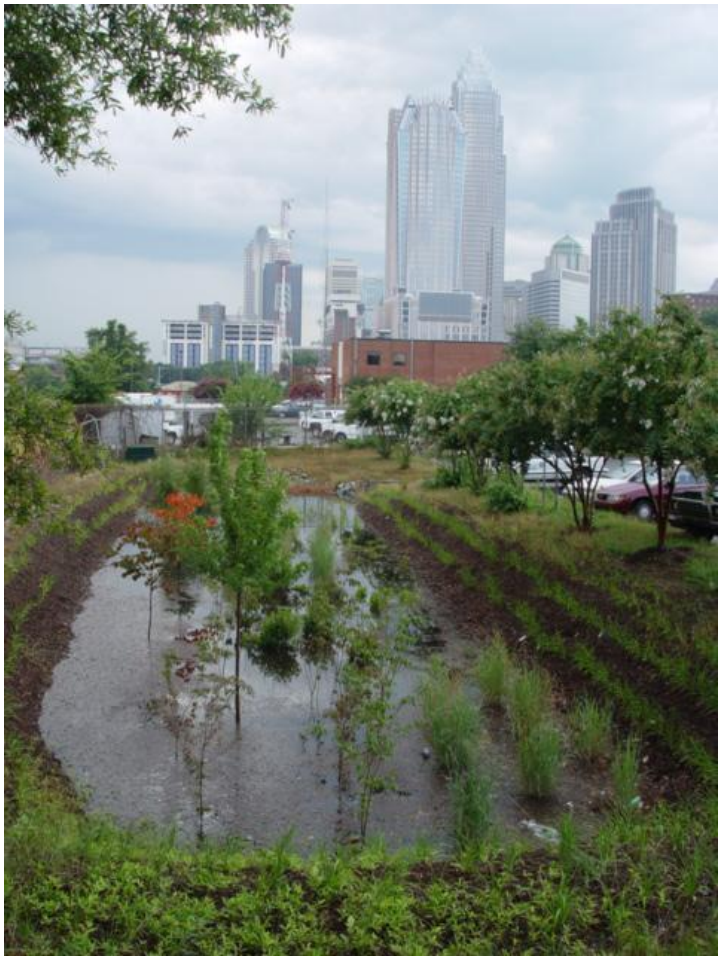
Wet Ponds with Floating Wetlands

Constructed Stormwater Wetlands

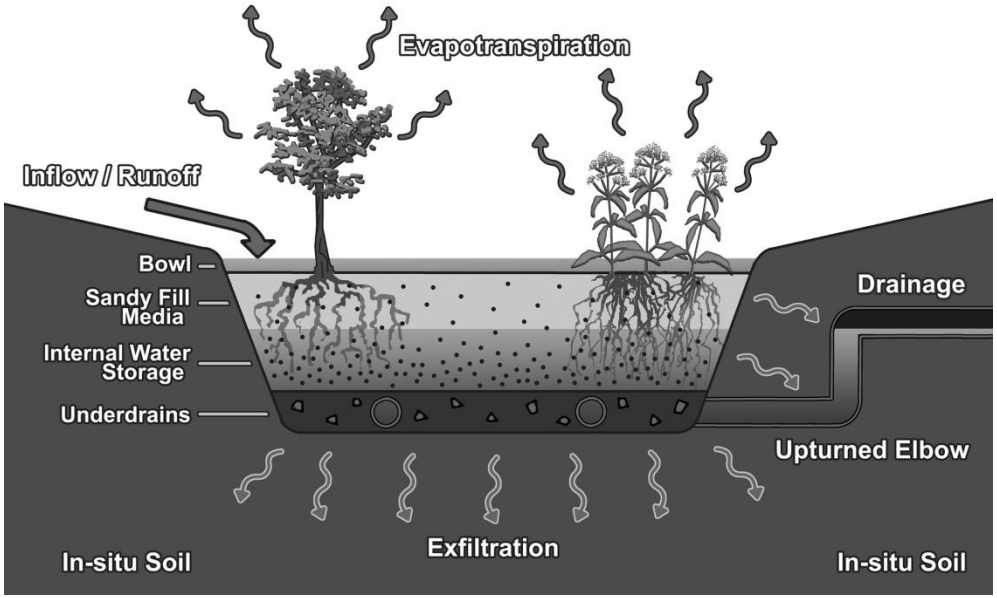
Stormwater Wetlands @ School

Winter – Student Classroom

Bioretention



Bioretention (Rain Gardens)



Bioretention Cells

Large Parking Lot

Grassed Bioretention

Transportation Bioretention

Treating Rooftops

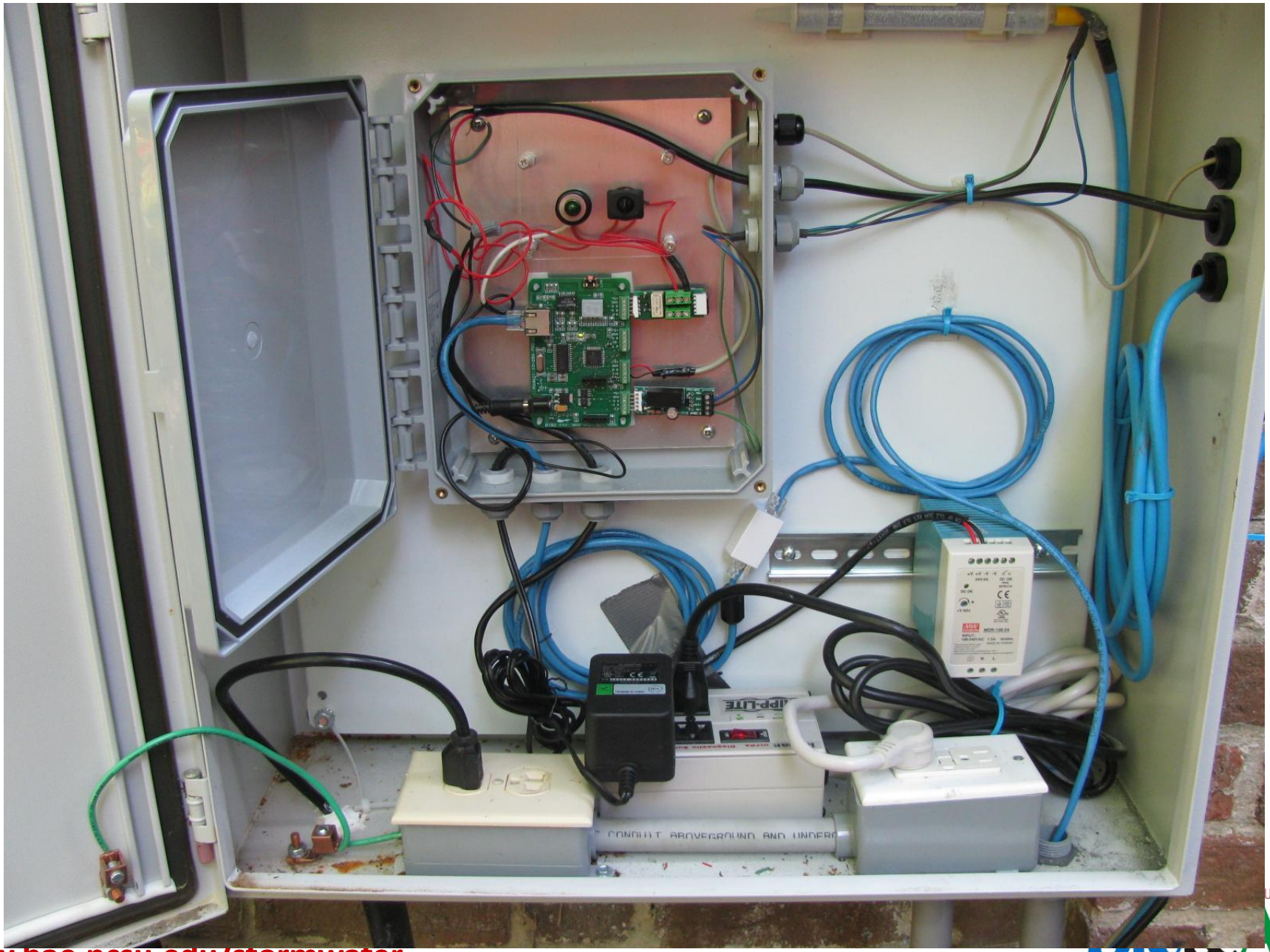
Backyard Rain Gardens

Wetland Swale – Good for Nutrient Removal (and…)

Permeable Pavement

Rainwater Harvesting

Using RTC to Optimize Stormwater Management of RWH Systems


CONDUIT ABOVEGROUND AND UNDERG

Down Spout Disconnections (DSD)

Downspout connected to the sewer pipe. Most homes in the Pocket had downspouts installed in this way.

Downspout disconnected from the sewer pipe so the rainwater flows to the grass or garden.

TorontoDownspout

Helping Protect Our Waterways

Infiltration

DSD

DSD

Infiltration

DSD

Natalie Carmen

Preliminary Results- (4.5 months of data)

- Four downspout disconnection sites were amended with lime and 1 inch of compost incorporated in the upper 6-8 inches of the soil profile.
- Sites were then seeded, protected with wood fiber matting, and allowed a three-month establishment period prior to data collection.
- Two of the four amended downspout disconnection systems showed significant volume reduction from the pre-amendment period. Total volume runoff volume reduction was increased 17% and 23%.

Infiltration

DSD

Natalie Carmen

Preliminary Results- (4.5 months of data)

- The two sites that showed improvement had contributing roof area of 300 sf and slopes less than 7%.
- The site with greater than 500 sf of contributing area did not show a significant difference in performance, and the site with a 27% slope showed a decrease in volume reduction and increase in erosion.
- All four amended sites were previously established lawn in a neighborhood developed prior to 1940.

Infiltration