#3
Hort 308
9/30/14
CT2 Visual Essay 2

Photo by Student#3

In an article by the Sustainable Sites Initiative, it is claimed that removing water via gutters and drains as quickly as possible is not a very effective management practice, and instead to truly manage the stormwater, we must implement systems that mimic nature's own way of filtering and managing water on site. Patrick Rivers, a representative from Land Planning Associates, Inc. Civil Engineering firm, supported this claim early in the semester by calling to mind two recent floods we have had in the Clemson area the past couple of years. Patrick explained that the stormwater runoff from Clemson's campus is simply carried away by drains and emptied into the nearby Hunnicutt Creek. While this seems like the best solution for all the runoff, he claims that the high velocity of the water running unimpeded through the storm drains and into the creek is actually damaging the creek and surrounding ecosystem. According to Mr. Rivers, in only 5 years he has seen yards of soil being eroded away from the banks of the Hunnicutt; an amount that is exponentially greater than previous years. In my own experience, I have found that this claim is very true as well. Working at the South Carolina Botanical Garden this past summer has given me a new perspective on stormwater management. In the garden, the creeks are all surrounded my woods and occasionally a trail or two. Even so, we still have had major problems with erosion simply because the runoff from a parking lot no less than 100 yards uphill empties into the creeks unimpeded. One would assume that 100 yards of gardens and woodlands would sufficiently slow

the water. Not so. The issue is the velocity. The water coming off the street seems to have a higher velocity that is not slowed by the vegetation because the vegetation is not thick or adapted to hold soil on an incline. Since the major floods, garden staff, myself included, have been constructing a series of berms and rain gardens with native and wetland plants to slow the water. Having the water travel in a more diagonal line down the hills instead of straight toward the creek reduces the velocity substantially. The velocity is further reduced by the rain gardens and the thick vegetation growing in them. The water in our creeks in the garden has become substantially clearer and does not cloud up with mud to the degree that it did before we began installing these sustainable water management techniques. Having seen these sustainable water management measures work so well in so little time, I will certainly incorporate these techniques into any future development projects or to address water management concerns.