The Savannah River Basin is subdivided into 34 watersheds South Carolina, including Tugaloo/Seneca River Basin.

For the most part, campus and watershed boundaries overlap. The watershed drains the campus into the extant Seneca River Beds through Hunnicutt Creek and several other tributaries into the Corps of Engineers pump station which is pumped into Lake Hartwell.

Although site lands have been impacted by many former urbanized activities, several different plant communities are present in the natural areas on site. Invasive exotic plant species have threatened sloped areas by altering plant community composition and limiting regeneration. These species were introduced for ornamental horticulture, wildlife habitat and forage, and erosion control. Invasive species out-compete native species. Existing trees are mainly deciduous, such as Oak, Fir, Maple, Poplar, Sweetgum, Cherry, Cedar, and Pine. There are limited number of shrubs in the site such as Doublefile viburnum.
NATURALIZING A CAMPUS HABITAT
Hunnicutt Creek Reclamation

Conceptual Design

The concept of this design has been inferred from how different bodies of work are connected. This figure illustrates how the bodies of work are connected in the site. In fact “Environmental Education” act as an connector between “Human and Urban Stream Connectivity Aspects” and “Re-naturalization of Urban Stream.”

Design Water Bodies

The main water body in the site is the creek. Bio-swales allow storm water run-off to be cleaned and filtered before entering the creek. The Catch basins connect bio swales to ground for filter over protection. The dry creek beds act as a flood controlling tool for erosion reduction in the site.

Master Plan

Design Green Space

The green space analysis includes large trees, which are from the existing and some new plantation in the north, east and south-west of the site. Also, a hedge of evergreen large trees provides noise buffering for the site. Small trees and shrubs shall be planted around the creek to provide more shade for the area around the water. Also, some wetland plantation is recommended for the Bio-swales and creek bed. The large lawn area shall be replaced with a meadow of wildflowers and perennials.

Design Circulation

Re-thinking Parking Lot

Storm water runoff is a major cause of water pollution. Runoff is exacerbated by ubiquitous hardscape in our cities. This parking lot or sidewalk can adapt to become more permeable, and to slow and clean urban waters, improving both pedestrian experience at a site scale and water quality at regional scale.

Design Special Use

The special use diagram introduces a place for outdoor classroom as a flexible event space and a multitude of smaller gathering spaces for study and relaxation under the shade of broad canopy trees. The multifunctional sitting areas can be a solar structure, which provide shade for the users. This environmentally friendly shade structure is multifunctional, provide sitting area, clean energy and protection against rain and precipitants.
This plan shows the first section of natural channel design for achieving large ecosystem goals by demonstrating river restoration. Water enters the site through a large pipe and then pours into a large pond to reduce its flow. After that water travels to shallow area of riffles before receiving to J hooks, which allow for direction change and slowing down the flow. Later, water pours into a larger plunge pool for aerating and wild habitat improve

The second section of the Creek re-naturalization start with typical sills allow to decrease near-bank shear stress, increases the energy in the center of the channel, grade control, reduce bank erosion and maintain channel capacity. After that step pools from large immobile boulders and most effective in wide, shallow streams for erosion reduction and sedimentation prevention. Finally, W Weir allows to improve wild habitat, grade control and bank protection.

Boulder clusters from large immobile boulders appear mainly in last part of the renaturing creek for flow acceleration, air entrainment and reducing erosion and preventing sedimentation. Boulder clusters are most effective in wide and shallow part of the creek.