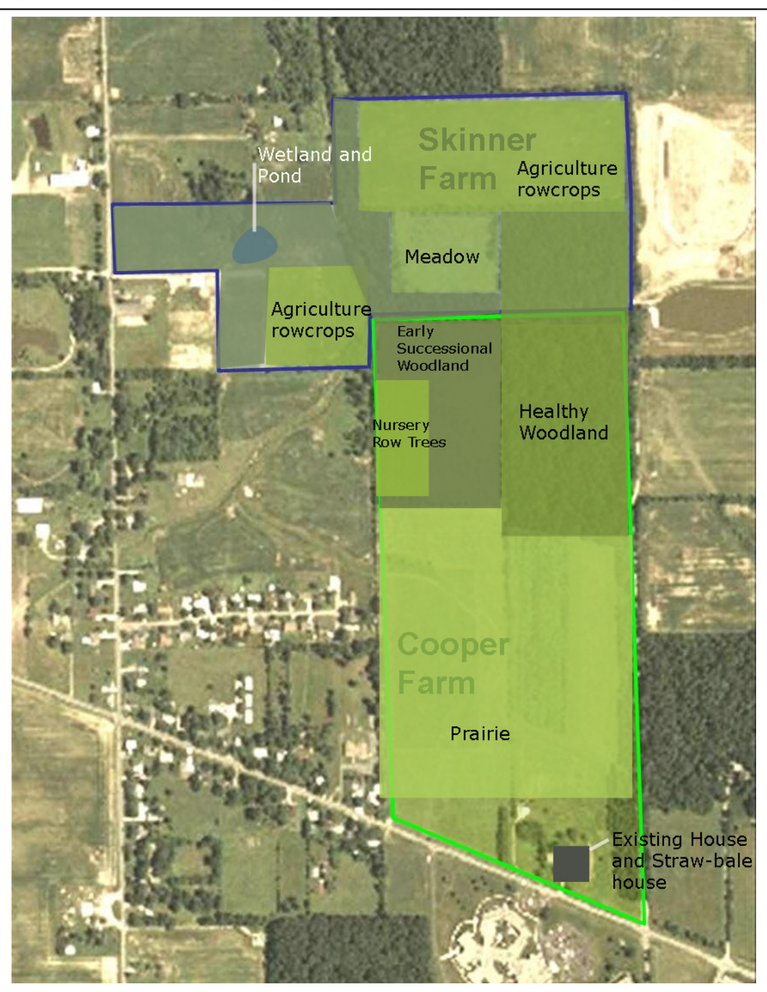
RESOURCE-BALANCE MANAGEMENT COOPER-SKINNER SITE

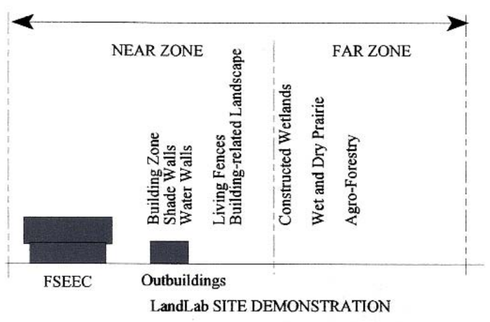
BSU LandLab proposes a site design that brings to balance the three ecosystems of the region: wooded, prairie and wetland. In order to reach a balance between the built-site system and the natural landscape system, base lining and site-monitoring is necessary. The map to the right shows the current conditions of the site management zones, revealing the health of the existing landscape systems on site. The diagrams below demonstrate the relation of the Straw-bale built-site within the habitat management zones. Through site-monitoring of water quality, species diversity and invasive species, progress of the ecologically balanced site-management can be measured. These monitoring stations will reveal sustainable decisions to ecologically balancing a site.



INTEGRATED SITE MANAGEMENT

BUILT-SITE SYSTEM

LANDSCAPE SYSTEM



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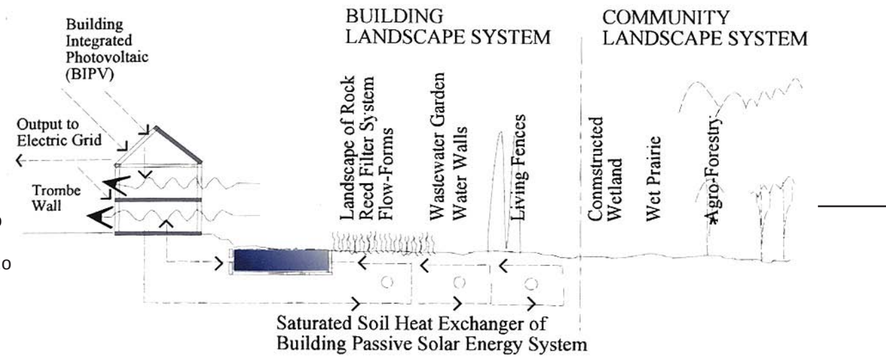
FSEEC-LandLab Green technology demonstration Unit: in the built-site, it is recommended to be designed as an integrated water-wastewater-energy-landscape system. In this system, energy and water are harvested by the building roof-mounted energy systems; and water is harvested by the building and other impermeable surfaces. Wastewater gravity-flows to on-site wastewater demonstration areas that provide restored water to living fences, vines that shade the building, other plant materials, and water walls, while providing thermal mass to serve as a heat sink for building passive energy systems. The landscape system uses solar energy to complete wastewater processing and to return nutrients to the system; as well the system extends into the non-built site. The built-site ans the nonbuilt-site work together to help the built-site achieve resources-balance within overall site boundaties.

zzEnergy component of the Integrated Water-Wastewater-Energy-Landscape System: this component should be designed to demonstrate how built-site systems can harvest solar energy for building and site use. It should be designed to demonstrate how to take advantage of the thermal mass of the effluent-saturated soil as a heat sink for the building bioclimatic systems as well how to contribute energy back to the web.



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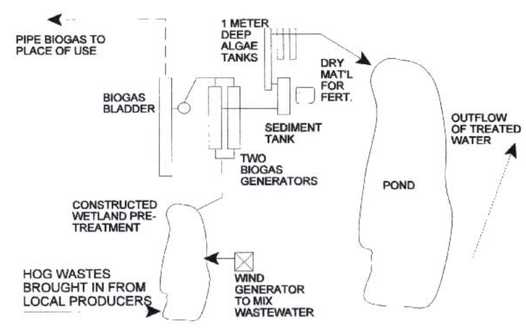

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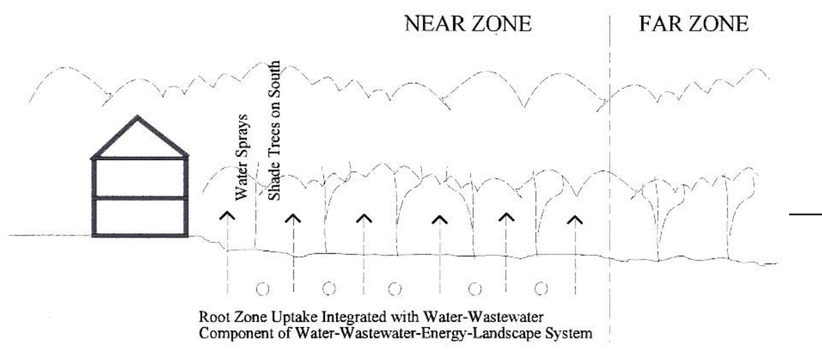
Integrated Hog Waste-Energy-Food Production Landscape Systems: it is recommended that the unbuilt portions of the Cooper-Skinner site demonstrate a range of organic materials and animal wastes as potential energy sources as well demonstrate integrated biogas, wind, and biotic systems for the production of energy and food, and for enhancement of site resources. While a number of energy sources could be used, the preferred energy source for integrated waste-energy-food production systems is hog wastes.

Landscape component of the Integrated Water-Wastewater-Energy-Landscape System should be designed to demonstrated how built-site systems can provide appropriate habitat for the organisms that are needed to complete wastewater treatment, to maintain soil conditions conducive to system function, to convert nutrients in effluent into plant biomass, and to provide insolation, thermal, humidity, and other benefits that augment building energy systems, and that enhance building and site bioclimatic comfort.



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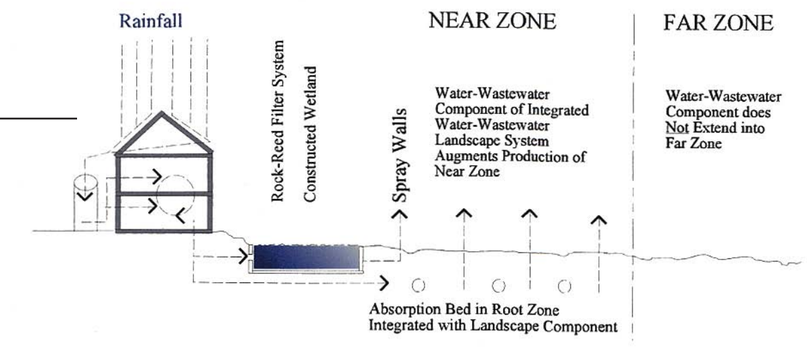

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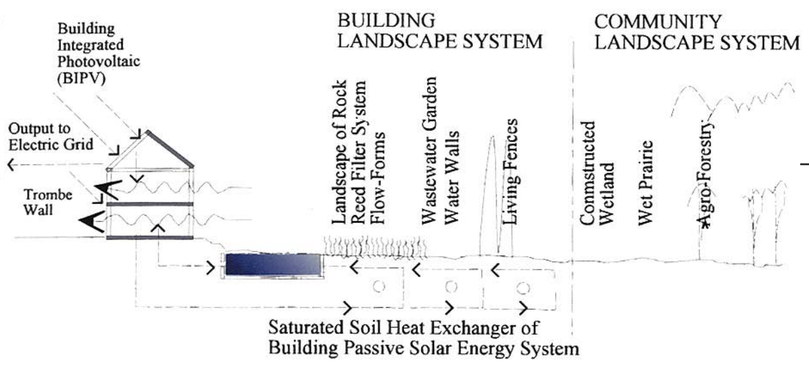
Water-wastewater component of integrated water-wastewater-energy-landscape system. This component should be designed to demonstrate how built-site systems can harvest water, store the water in a visible manner, distribute the water for use and reuse in buildings and site, and collect and distribute wastewater to living treatment systems, and then to the root of the site's landscape system.

Solar-Energy-Landscape component of the Integrated Water-Wastewater-Energy-Landscape System should be designed to demonstrate how built-site systems can use the site's vegetative systems to augment the ability of the building to harvest and use energy and to contribute energy to the grid, as well demonstrate how built-site systems can promote and demonstrate the diverse functional and aesthetic landscape that can result from integrations of the building energy and site landscape systems.



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