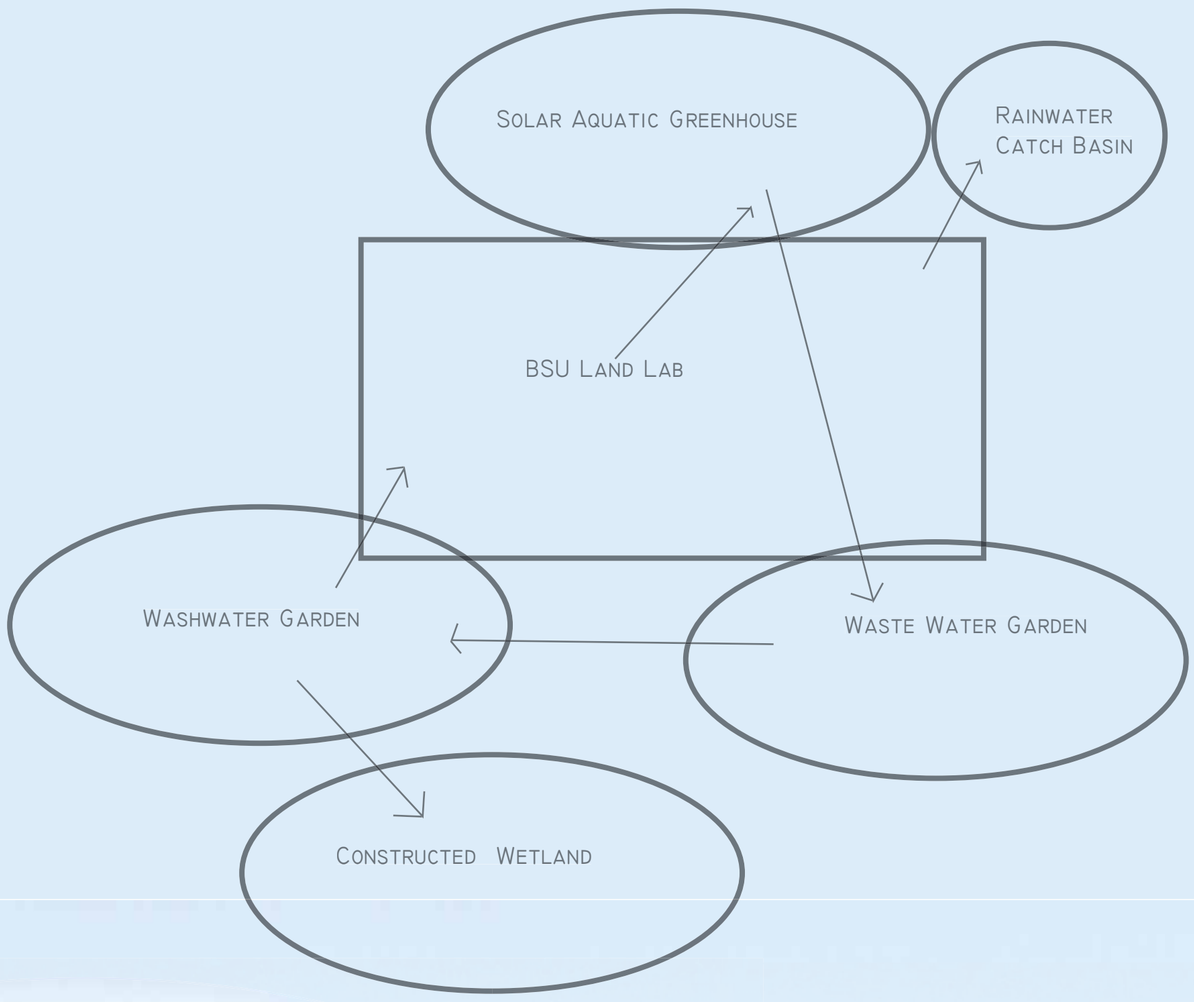
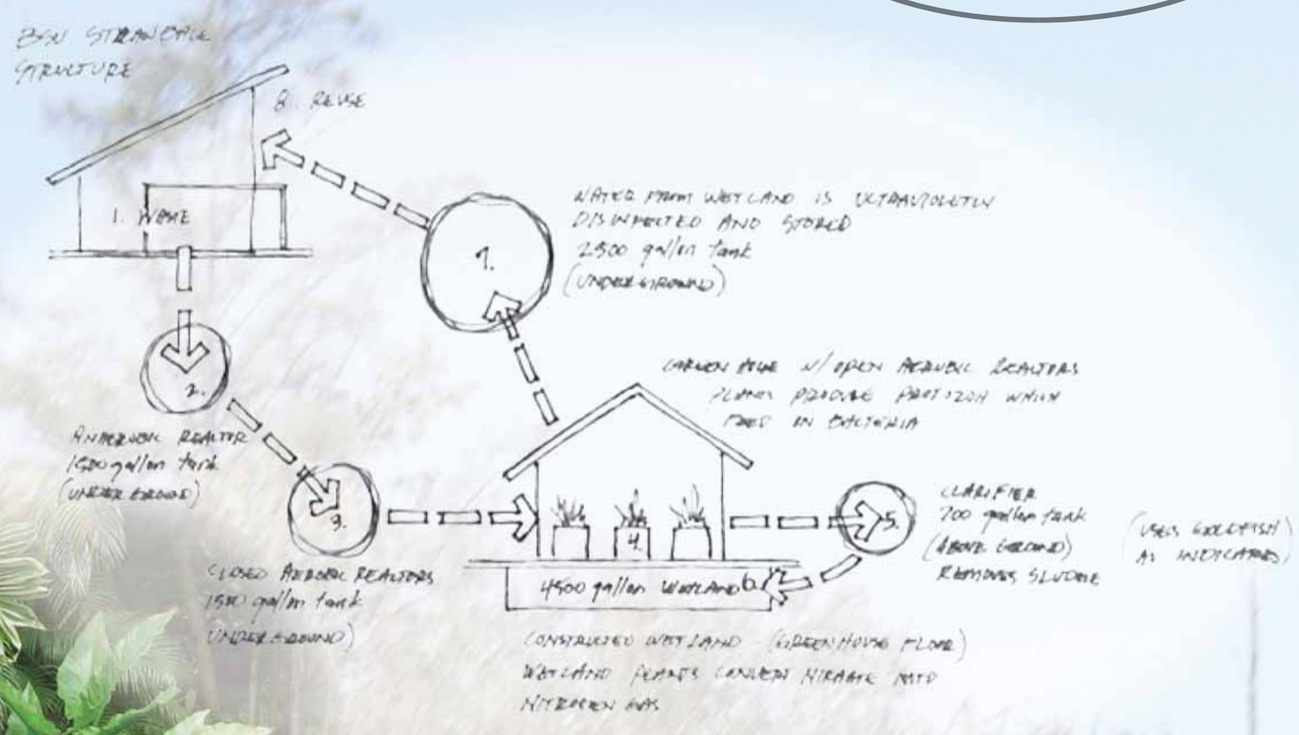
Landscape Systems: Straw Bale Land Lab

alisha koester . sharon dougherty . Corey Seltenright



Solar Aquatic Greenhouse



The solar aquatic method to treating waste water can clean it to tertiary quality, removing higher levels of organic and solid materials, nitrogen, and phosphorous from the wastewater, disinfecting it, in a cheaper method than traditionally. Tertiary treatment brings the effluent to drinking water standards. This process uses no chemicals and produces less residual sludge. The system contains solar tanks, a solar pond, and a constructed marsh designed to duplicate a natural ecosystem. Plants, microorganisms, snails, and fish that live there consume most of the organic nutrients contained in the waste.

Waste Water Garden

The first step of treatment using waste water gardens is water entering a septic tank, after which it will be fed into a hole filled with a diverse range of plants with a gravel base. The gravel in the system increases the surface area of the garden in order to greatly decrease the number of fecal coliform bacteria so that ground water is safe from contamination. The plants maintain a population of aerobic bacteria and take up and transform the waste water. In this way plants, microbes, sunlight, and gravity transform the waste water into beautiful gardens and water that can be reused.

Washwater Gardens

Washwater gardens use a patented specially engineered system to evaporate and grow away washwater, also known as grey water. The result is a beautiful landscape and clean water. This system is typically used in conjuction with a composting toilet. Recycled greywater is put through a number of stages of filtration, and microbial digestion can be used to provide water for washing or flushing toilets; relatively clean grey water may be applied directly from the sink to the garden as it receives high level treatment from the soil and plant roots.

Constructed Wetland

Constructed wetlands are artificial marshes, acting as a biofilter, removing sediments and pollutants from the water. Vegetation provides a structure upon which microorganisms that break down organic materials can grow. Physical, chemical, and biological processes combine in wetlands to remove contaminants from wastewater.

Sites of inspiration

www.oberlin.edu . www.ecowaters.org . www.epa.gov . www.greywater.com . www.wastewatergardens.com