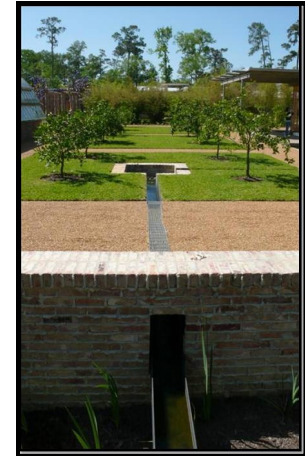


SHANGRI LA BOTANICAL GARDENS AND NATURE CENTER

Orange, Texas

Project Purpose

- To provide a water- and energy-conserving irrigation system that efficiently supports the highly aesthetic land development.
- *Intent:* To utilize harvested rainwater as efficiently as possible, and to attain high marks for sustainability.



Special Factors

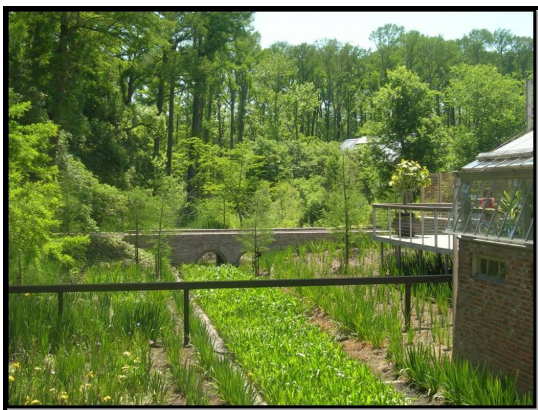
- Exemplifies highest possible efficiency and conservation metrics, and integrates sustainability between the building architect, landscape architect, and irrigation consultant.
- Highly publicized due to historical significance, use of building materials harvested from the site, and collection of unique plant materials found in the garden.
- Construction process impacted by Hurricane Ike:
 - Several partially completed sections had to undergo reconstruction;
 - Project team utilized natural debris as raw materials for site structures which reduced waste and assisted in the cleanup effort.



Role of Irrigation Consultant

The Irrigation Consultant provided:

- Schematic design through construction document phases for the nature center irrigation system.
- Extensive coordination with the landscape architect, civil engineer, and building architect.
- High-efficiency spray equipment and in-line drip irrigation tubing:
 - Internal check valves and pressure-compensating devices provided by emitters within the tubing minimize water waste;
 - an energy efficient variable speed pumping plant supports the system.
- Effective utilization of harvested water from the building's metal-roof complex.
 - Rainwater is stored in multiple above-ground galvanized tanks; these tanks are connected by underground gravity-fed piping to the irrigation pumping plant used to pressurize the system.



Significance

- The landscape development occupies 252 acres of land that hold diverse native flora and fauna.
- The world-class facility educates visitors about the ecology and natural environment of the area.
- The project includes an extensive botanical garden, children's interactive garden, plant research facilities, two cafes, and demonstration gardens.
- The development is the first facility in the state of Texas to achieve LEED Platinum status.
- The Nature Center Complex utilizes plants irrigated either solely by collected rainwater and natural rainfall or by non-irrigated indigenous plant species.