

UNUM Insurance Case Study

Objective: To reduce municipal water usage at UNUM's new Corporate Headquarters site in Chattanooga, TN.

Site Specifications & Known Requirements:

- Harvested water usage to be 100% irrigation.
- Urban location
- Average gallons of water needed per week: 7,950
- Maximum gallons of water needed during peak summer weeks: 9,750
- Parking Lot surface area: 1.64 acres of drainage area (92,000 square feet)
- A 1" rain event would yield 54,000 gallons.
 - The tank would be completely filled on a ½" rain event.
- Average yearly rainfall for the area = 55" per year
- Required H2O load rating for parking lot application
- Required oil / water separation
- Required in-tank filtration for grit separation
- Chattanooga's water cost is the highest of the state's six largest cities.



Solution:

The tank size was optimized for a 20k gallon underground storage capability which would provide a two and a half week irrigation supply. Based on the frequency of rainfall in this area, it was determined to be sufficient on an annual basis.

The system is uniquely constructed to work with parking lot run-off and required grit & debris filtration as well as oil-water separation chamber. Grit, debris, and oil are restricted to the left side of the tank and clean water is moved through to the right side of the tank for irrigation re-distribution.

The Watertronics VFD-driven pump station matches pump output to irrigation demand, thus minimizing energy consumption.

Results:

- This system collects a full tank (20,000 gallons) on a 1/2" rain event.
 - A ½" of rain will provide 2.5 weeks worth of irrigation.
- The SkyHarvester system reduces UNUM's potable water consumption for irrigation by nearly 100%.