



The Benefits of Rainwater Harvesting

Rainwater harvesting improves Georgia's quality of life by increasing water supply and reducing stormwater runoff, which improves water quality and prevents flooding. Rainwater harvesting saves money for property owners on their water bills, and saves the city money on reduced system operations and maintenance. Rainwater harvesting also affects energy use because municipal water treatment is a highly energy-intensive process. If all the roofs in Metro Atlanta collected rainwater, 300 million gallons of water per day could be generated, on average, while removing the equivalent volume and associated pollution from the storm drains. In Georgia, rainwater harvesting is primarily used for watering lawns and flushing toilets.

Georgia Institute of Technology (Atlanta, Georgia)

CLOUGH COMMONS ROOF GARDEN



Georgia Tech has a Stormwater Master Plan which covers 180 acres. Key goals include: water capture and reuse, runoff volume reduction, mimicking the natural process, a campus "regional" approach, and exceeding regulatory requirements. They are aiming for 1.2" runoff reduction from the entire area when 1.0" is required; leading to four times the reduction in flow to the combined sewer. The estimated cost of this plan is \$2 million less than basic compliance, due to savings primarily from reduction in demand for potable water.

The G. Wayne Clough Undergraduate Learning Commons is a highlight of the Stormwater Master Plan.

Their 1,400,000 gallon cistern is the largest on a US campus, and the designers received the National Recognition Award from the American Council of Engineering Companies for this project.

Grand Hyatt Atlanta (Buckhead, Georgia)

The Grand Hyatt Atlanta in Buckhead captures 100% of the rain that falls on the building, as well as condensate from ice machines and the HVAC system. The initial plan included a \$100,000 investment in rainwater harvesting, with an anticipated return on investment of 3.84 years. The project was expanded in 2013, with a new return on investment calculation of 2.36 years, an annual savings of \$42,331. For this effort, the Grand Hyatt received national attention and was featured in five industry publications. There is no water from the building that enters the storm drain. In 2014 and 2015, they were awarded TripAdvisor's GreenLeader Platinum Level for their rainwater reuse, which tops 30,000 gallons per day.



University of Georgia (Athens, Georgia)

The University of Georgia (UGA) has maintained a nearly 30% reduction in water use since 2007. Operational upgrades and behavioral modification programs have contributed to a culture of water conservation on campus. Fifteen cisterns on campus collect and store over 530,000 gallons of rain and condensate for reuse in campus buildings and landscapes, including a gray water reuse system installed in the new LEED-certified residence hall Building 1516. Over fifty rain gardens have been installed to improve storm water and watershed health at UGA.

The largest of these cisterns is 200,000 gallons and managed by the UGA Athletic Association, which uses collected rain and condensate water to irrigate the Woodruff Football practice fields.

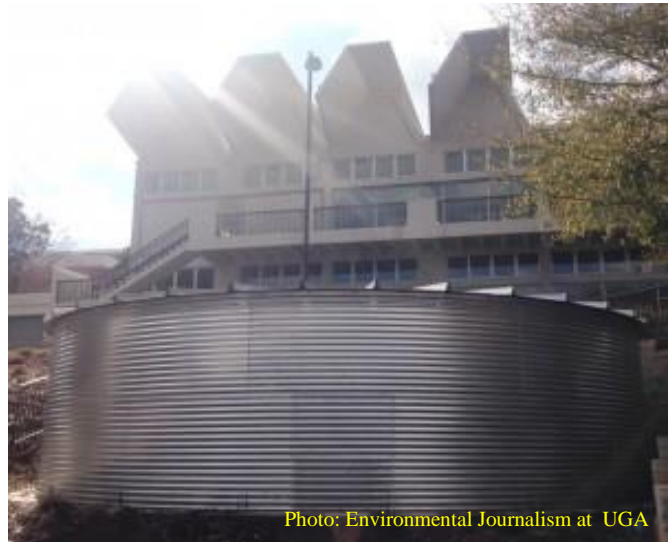


Photo: Environmental Journalism at UGA

Emory University (Atlanta, Georgia)



Photo: Department of Watershed Management

Emory University has a rainwater harvesting and condensate recovery system which accounts for over 4 million gallons of water per year, including six cisterns with a collective volume of over 350,000 gallons used for toilet flushing and irrigation.

In their new freshman residence complex, rainwater and condensate collection is diverted to an 89,000 gallon reservoir which can provide 2,170 gallons per day to flush toilets in the buildings. The rainwater is collected from the roof, then filtered and slowed through a bioswale system and then into the cistern. The condensate harvest provides a reliable source of water to supplement rainfall during the summer. It's estimated that the condensate harvests is adding 300,000 gallons per year to the system.

The Whitehead Biomedical Research Facility Building has a system of piping condensate back into nearby cooling towers to use as make-up water. This system conserves water and diverts 2.5 million gallons a year from the sanitary sewer system.