

AUSTIN CENTRAL LIBRARY

In 2017 Austin Public Library (APL) moved its Central Library to a new 198,000 square-foot LEED Platinum certified building on Cesar Chavez in the Seaholm District redevelopment. Expanding on their practice of including rainwater harvesting elements in new buildings, APL included an underground storage tank for collecting rainwater and A/C condensate. This collected water is used for toilet flushing and for irrigating the building landscape, including a vegetated roof. The onsite supply is backed up with the City of Austin's centralized reclaimed water supply.

The redevelopment of the decommissioned Seaholm Powerplant provided a unique opportunity for the new Central Library for onsite water reuse. Initially identified for stormwater control measures, the decommissioned plant's pump intake room was also repurposed to provide 350,000 gallons of storage for rainwater and A/C condensate collection. The collected water goes through a simple treatment process of cartridge filtration and UV disinfection and then it is transferred to a 10,000-gallon day use tank. This day use tank is backed up by the City of Austin's centralized reclaimed water supply, ensuring that drinking water is never used for toilet flushing or irrigation. Water leaving the day use tank is metered to track how much water the system saves. Since the system came online, the Central Library is saving a little over 1.5 million gallons per year of potable water on average.

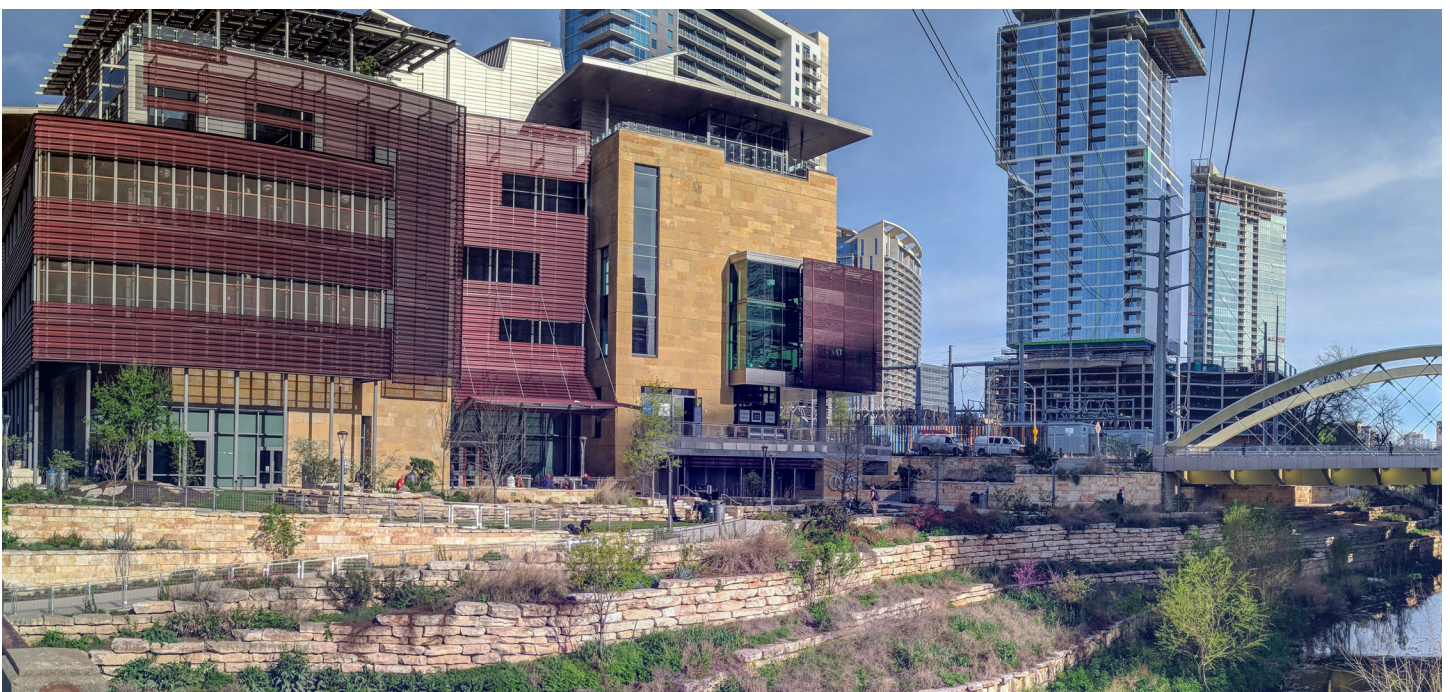
Drivers

Sustainability has been one of the guiding design principles since the inception of Austin's Central Library, with the goal of achieving a LEED designation. The water use reduction achieved by the onsite reuse system contributed to the Central Library becoming the first City of Austin building to achieve the prestigious Platinum designation.

"During the preliminary design phase, all of the project participants - City of Austin staff, consultant architects and engineers and the construction contractors - committed to creating the greenest, most sustainable central library for our community that could be achieved," said John Gillum, Facilities Process Manager, Austin Public Library. "Austin's New Central Library being certified as a Platinum LEED building is a testimony to the tireless efforts of the entire project team to be environmentally responsible, use resources efficiently, and provide the citizens of Austin with the best building to house their central library that was within our capacity to design and construct."

Operations and Maintenance

The operations and maintenance needs of the onsite reuse system are minimal and are similar in nature and magnitude as those associated with pool maintenance.



Maintenance activities typically involve filter replacements, inspections for leaks and pump testing and repairs. To facilitate maintenance and ensure continuous system functionality, the onsite water reuse system is connected to the overall Building Management System (a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment) which allows the building maintenance staff to remotely monitor system components, easily locate and diagnose issues, and receive automatic alerts for any system malfunction. Lee Butler, Building Services Manager with Austin public Libraries describes his experience with the onsite system as "The mechanics of a rainwater and A/C condensation collection system are fairly simple. Glad we did it. Here is a low-cost solution for a long-term benefit."

System Cost

While actual costs for the individual components of the reuse system weren't available for this project, it's worth mentioning the types of costs associated with installing onsite water reuse systems. For a system that stores large volumes of rainwater, the cost of storage is oftentimes the most expensive component. Significant savings were therefore achieved by repurposing an existing underground storage vault. Rainwater and A/C condensate contain very few pathogens and do not require extensive treatment for reuse, which allows for a relatively low-cost treatment process of filtration and disinfection. Another significant source of project cost is the dedicated set of piping that is required to supply the reuse water to toilets and the irrigation system.

Ownership

The onsite water reuse system at the Central Library is owned by the City of Austin and is operated by Austin Public Library Building Services staff.

Reference Contact

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Project Status:	Online
Development Size:	198,000 sq.ft.
Onsite water sources:	Rainwater, A/C condensate
End uses:	Toilet flushing, Irrigation
Treatment train components	Cartridge filtration, UV disinfection
Potable water savings:	1,500,000 gallons/year
Estimated utility savings:	\$8,000
Drivers:	LEED points, Department sustainability goals, Public engagement
System Cost:	Not available
Annual O&M Cost:	Not available
Owner:	City of Austin