

# ...Year in PROJECTS...

Photo Credit: Landmark Structures

*This Year in Projects ad section was researched and written by Linda Mastaglio, a communications consultant serving AEC firms and associations. She can be reached at 903-963-8923 or Linda@twi-pr.com.*

## Ahead of the Curve

Elevated water towers are among the most visible examples of municipal infrastructure. Yet their potential to enhance the environment often goes unnoticed or unexamined.

In October 1989, ENR featured an article on a new design for elevated water-storage tanks that changed the materials, the construction process and the market. That article focused on the work of Landmark Structures, the originator of the composite tank concept. Today, 20 years later, it is the accepted industry standard, and Landmark is launching another new era in tank design.

Based on the composite platform of a welded steel tank supported by a reinforced concrete pedestal, this latest iteration has risen above East 51st Street in Austin, TX—a city known for its progressive approach to music, culture...and the environment.

### Storage Meets Sustainability

In 2007, the Austin Water Utility (AWU) prepared to add another link to an innovative reclaimed-water network they began building in 1993. Their reclaimed, treated wastewater provides a safe but alternative water supply, enabling the city to conserve its potable water during hot, dry summers and intermittent drought cycles.

Their current expansion involves a two-million-gallon water-storage tank, to provide pressure and peak-demand regulation for the reclaimed system. Coupled with pump-station upgrades, it can extend reclaimed water to the University of Texas' main campus and to the Mueller area, a 711-acre former airport site now being redeveloped as a master planned, mixed-use urban village.

Determined to gain community support for the effort, the utility formed a project advisory committee, composed of local neighborhood association representatives, who endorsed making the structure a unique visual landmark. The



The 170-ft-tall tank is positioned on a compact site bound by existing roads and structures.

city proceeded with concept development, integrating the extensive public input into the process.

Landmark Structures was awarded the job for design and construction, and broke ground in April, 2008. Scheduled for completion in early 2010, this next-generation water tank will support the city's commitment to sustainability while also achieving established aesthetic goals.

The sweeping curves of the tank geometry are the result of a collaborative effort between the city and the design and construction team. This provides a distinctive yet cost-effective design that incorporates functional benefits such as rainwater collection and solar-power generation. Slotted drains on the tank's roof will channel rainwater into the tank, projected to capture more than 139,000 gallons a year. The 48 175-watt photovoltaic panels that mount to the rooftop accent ring are expected to generate more than 16,500 kWh of electricity annually to power the site, returning the balance to the grid.

In addition, the dry, protected pedestal interior will house a pump station on the ground level and chlorina-

tion equipment on the second floor, providing added utility without the need for a separate structure. It also incorporates the use of "green" concrete, containing a high percentage of fly ash, a recycled material.

### Multiplying Capacity

Austin currently uses 1.17 billion gallons of reclaimed water per year—equivalent to the amount of water used by 5,300 homes. Future plans, including this tank and additional stages, will more than quadruple capacity to 5.5 billion gallons per year, freeing up potable-water supplies to serve the equivalent of more than 25,000 homes, and extending coverage from the city's eastern edge to the capitol complex and downtown area.

Reclaimed water fees have funded the tank's construction, as well as related improvements at the Walnut Creek Wastewater Treatment Plant, valued at \$8.3 million.

### Up to the Challenge

"The contractor selection process evaluated not just cost, but qualifications based on experience with challenging

## YEAR IN PROJECTS

The steel tank was erected at grade, allowing coatings application from the ground level prior to hoisting.



and aesthetically significant tank structures,” says Eric Lamon, Landmark vice president. “The requirement for architectural-quality concrete fit right into our established procedures. The bigger challenge, involving the complex double curves of the tank design, enabled us to validate some new processes for producing components that give you an immediate precise fit, reduce welding time and improve coatings performance.”

“This project also aligned with our philosophy that highly visible infrastructure should be more than just adequate, and reflect the highest practical architectural standards. It’s rewarding to work with a visionary owner who shares that commitment and wants to take it to the next level.”

According to Landmark, the composite elevated configuration has become the preference for large-capacity storage, garnering an approximate 75% share of its segment in recent years. “Because of its inherently efficient design and cost,” says Lamon, “it provided the logical platform for a project that sought to break new ground.”

December 28, 2009

### Evolution and Opportunity

For the City of Austin, perhaps the best measure of success is that the project is meeting all of its objectives and adhering to the original design intent. According to Dan Pedersen, reclaimed program manager, Austin Water Utility, “This has been a high profile endeavor, generating a lot of interest and involvement. The community was

committed to a landmark design and had high expectations for its execution as well—meaning the whole project-management process. The design and construction team embraced that sense of ownership and collaboration, and delivered.”

The greening of water towers is here...and the often untapped potential for these big, visible structures to enhance the environment is taking center stage in Austin. Twenty-five years after their introduction to the U.S. market, the next generation of composite tanks is opening up new design and sustainability potential for elevated water storage. ■



The rooftop accent ring will support 48 PV panels for solar power generation.

### About Landmark Structures

- A design-build contracting and engineering firm, currently #195 on the ENR Top 600 Specialty Contractors ranking
- Introduced the composite elevated tank for large capacity water storage in 1985
- Attributes market and company growth to the lower cost, greater lifecycle value and superior aesthetics of the product
- Self performs the majority of its work, including QP-1 certified specialty coatings
- Related operations include American Petroleum Institute (API) tank build and repair for the military, petrochemical and industrial markets.

Further information at [www.teamlandmark.com](http://www.teamlandmark.com)