



Special Storage Tank Category Winner **CB&I – The Woodlands, TX**

This unique and very large 4,333,000 gallon welded steel tank (104.5' diameter x 67.5' shell height) was wedged onto a very small site. The tank will actually pay for itself thru energy savings by operating as a thermal energy storage (TES) tank built for the University of Texas in Austin.

The tank stores reserves of chilled water that is more economically produced during off-peak energy times to cool campus buildings occupied by over 50,000 students and professors during the heat of the day.

The foundation design and construction were very complicated as the tank was surrounded on all sides by existing structures with high voltage mains running directly under the tank and to top it off - the soils were very poor! This necessitated a unique asymmetric pile layout that still addressed the tank loads. The internal flow diffusers were specifically designed for this tank.

To make the tank aesthetically pleasing and acceptable to the campus architect:

- an architectural painted aluminum jacket was used over the panel insulation serving, as a façade on the exterior tank shell and
- a low profile cone roof was used to minimize the overall tank height.

The welded steel tank met all of the challenges proposed by this site as well as provided additional benefits to the university:

- a 100% leak tight storage tank to eliminate the risk of any leakage on the adjacent campus dorms, parking structure and high voltage power station,
- the flexibility of steel design and construction in small, congested spaces,
- plus provided a low capital cost, low maintenance and a low life cycle cost.

This tank promotes and demonstrates the flexibility and aesthetics of steel designed structures to be built in very small spaces, and it pays for itself in a few years and continues to save the Owner money for many years to come.