

# CAMPUS CHILLED WATER SYSTEM

The Campus Chilled Water System (CCWS) encompasses 26 miles of underground piping connecting 90 main campus buildings to its five chilled water production plants. Campus chillers provide 37,500 tons of chilled water to cool buildings through their air conditioning systems.



A **chilled water system**, also known as a “chilled water air-conditioning system,” employs water chillers to remove heat from liquids via a vapor compression or absorption refrigeration cycle. Once cooled, the liquid flows through pipes in buildings and passes through coils in air handlers, fan coil units, or other systems to cool building air.



## REGIONAL PLANT CONCEPT

The CCWS is a single networked variable flow distribution piping system served by five regional chiller plants:

- Oak Street Chiller Plant
- North Campus Chiller Plant
- Library Air Conditioning Center
- Animal Sciences Air Conditioning Center
- Chemistry and Life Sciences Chiller Plant

Due to its remote location, the veterinary medicine campus operates its own satellite chiller plant and associated distribution system.

### The Campus Chilled Water System provides:

- Increased efficiency (one chiller can feed multiple buildings)
- Increased reliability
- Reduced maintenance costs
- Enhanced energy conservation - the chiller loop operates with fewer chillers, colder chilled-water temperatures, and reduced pumping requirements

## THERMAL ENERGY STORAGE

Integrated with the campus chilled water system, a 6.5 million gallon Thermal Energy Storage (TES) tank can produce reserved chilled water at night by operating existing chillers during off-peak hours when building loads subside and electricity costs are low. Chilled water is discharged during afternoon peak cooling periods thus allowing chillers to be turned off when electricity costs are highest. The tank is charged by pumping cold supply water from the chillers into the bottom of the tank while returning warm water from the top of the tank to the chiller plants.

