Air conditioning is a critical, but energy-intensive, part of campus building operations. The University of Michigan has adopted an efficient strategy of using closed-loop district cooling systems to provide chilled water for cooling where feasible. The systems consist of central plants that generate chilled water, underground piping to distribute the chilled water, and cooling systems in individual buildings that use the chilled water for air conditioning. These district cooling systems conserve energy and water, reduce operating and maintenance costs, and can reduce lifecycle capital costs compared with traditional stand-alone air conditioning systems.

**KEY FACTS**

- Allows for greater efficiency in production of chilled water using fewer, more efficient equipment
- Reduces maintenance cost by consolidating equipment
- Mix of steam absorption and electric centrifugal chillers in some plants allows flexibility to reduce electrical demand costs
- Improves flexibility, redundancy and reliability of cooling service
- Simplifies cooling system design for new buildings and renovations
- Permits phased tie-ins to existing buildings to accommodate replacement schedules for existing cooling equipment
- Provides year-round cooling for server rooms and research equipment
- Moves chilled water production out of individual buildings and frees up mechanical space for other uses
- Reduces load on existing building electrical systems
- Improves campus aesthetics by reducing number of exterior cooling towers

**East University Chiller Plant (EUCP)**

This plant was established in 1991 and provides cooling for the East University region of central campus, including CC Little, Dana, Dennison, East Hall, Pharmacy, Randall, and West Hall. A new electric centrifugal chiller was installed at this plant in 2009, and has reduced energy costs by an estimated $1.4 million per year.

**Hatcher Central Chiller Plant**

This centralized plant provides cooling for Hatcher North and South, Shapiro Undergraduate Library, Clements Library, President’s Residence, Tappan Hall, and Alumni Memorial Hall. Since completion in May 2006, energy savings of 50 billion BTUs per year, and water savings of 4.6 million gallons per year have been realized.

**North Campus Chiller Plant (NCCP)**

The NCCP went on-line in April 2005 and currently provides chilled water for 16 buildings (1,371,000 GSF) and is to be expanded in 2011. It is estimated that the NCCP avoids more than 2 million kWh of electricity purchases per year, resulting in an annual savings of about $180,000.