



# Healthcare

## Modular Utility Solutions

Hospitals and other medical facilities depend on the reliability of their HVAC systems to follow procedures and properly care for their patients. These facilities can provide difficulties for engineers, as many have had numerous upgrades and expansions. Systecon Inc. can eliminate those difficulties, designing a system to integrate all previous systems and allowing the most efficient system to be put into operation.

For new construction, a Systecon modular central plant can provide all utilities for a hospital including electricity, steam, hot water and chilled water through cogeneration. Medical gas, compressed air, and other hospital specific utilities can be included.

## Proven Success

### Modular Central Plant - Chiller Plant

#### Chilled Water System Data

Chiller Plant Chilled Water Flow:  
1,875 GPM (Future: 3,750 GPM)  
Chiller Plant Capacity:  
1,250 Tons (Future: 2,500 Tons)  
Fluid: Water  
Suction Pressure: 50 PSIG  
Working Pressure: 114 PSIG  
System Design Pressure: 125 PSIG

#### Cooling Tower Water System Data

Chiller Plant Cooling Tower Water Flow:  
3,100 GPM (Future: 6,200 GPM)  
Chiller Plant Capacity:  
1,250 Tons (Future: 2,500 Tons)  
Fluid: Water  
NPSH Available: 19.7 PSIG  
System Design Pressure: 125 PSIG

**Mechanical** - Chiller, pumps, pipe, plate & frame heat exchanger, chilled water system make-up water, chemical shot feeder, chilled water side stream filtration, strainers, valves, adjacent cooling tower & structure

**Electrical** - Drives, motors, panel boards

**Controls** - Full central plant controller w/HMI, VFDs, heat tracing system, chiller and tower sequencing by Systecon

**BAS Interface** - Protocol: BACnet Type: Ethernet/IP



#### VAMC Jamaica Plain, Boston, MA

**Designed to meet MA code requirements  
Outdoor application with enclosure –  
150 MPH wind load, min. snow load rating of 40  
pounds/ft<sup>2</sup>, refrigerant monitoring system**

**Testing** - Pump flow testing of the chilled water pumping system (individual variable speed) and cooling tower water pumping system (individual constant speed) performed by Systecon, witnessed at the factory, with certified Wire-to-Water Efficiency report provided.

In addition to design and assembly, Systecon Inc. also supervised the rigging, reassembly, start-up and commissioning of the chiller plant, providing a level of consistency throughout the entire process. (Chiller performance and pressure tests and start-up performed by chiller manufacturer.)

## Chilled, Heating and Domestic Hot Water Plant

### Chilled Water System Data

Total Flow: 2,000 GPM (Future: 3,000 GPM)  
Total Capacity: 1,000 Tons (Future: 1,500 Tons)  
Fluid: Water  
Suction Pressure: 125 PSIG  
Working Pressure: 125 PSIG  
Maximum Pressure: 150 PSIG

### Condenser Water System Data

Total Flow: 3,000 GPM (Future: 4,500 GPM)  
Fluid: Water  
Suction Pressure: 125 PSIG  
Working Pressure: 125 PSIG  
Maximum Pressure: 150 PSIG

**Mechanical** - Chillers, pumps, pipe, plate & frame heat exchanger, air separator, expansion tank, strainers, valves, adjacent cooling tower & structure, make-up water, water softener, thermostatic mixing valve, emergency eyewash station, chemical shot feeder, chemical treatment system, flash tank

**Electrical** - Drives, motors, panel boards

**Controls** - Full central plant controller w/HMI, VFDs, refrigerant monitoring system, chiller and tower sequencing by Systecon

**BAS Interface** - Protocol: BACnet Type: Ethernet

**Chiller Interface** - Protocol: BACnet Type: MSTP

**Testing** - Factory hydrostatic test of piping. Non-witnessed flow test - CHW, CDW, HHW pump sets pressure measured at 25, 50, 75, and 100% - and chiller plant functional test at the factory.

### Heating Water System Data

Total Flow: 490 GPM  
Fluid: Water  
Suction Pressure: 125 PSIG  
Working Pressure: 125 PSIG  
Maximum Pressure: 150 PSIG

### Domestic Hot Water System Data

Total Flow: 45 GPM  
Fluid: Water  
Suction Pressure: 125 PSIG  
Working Pressure: 125 PSIG  
Maximum Pressure: 150 PSIG



Desert Springs Hospital Medical Center  
Las Vegas, NV

Outdoor application with enclosure