

# Building Control System

## University of Pennsylvania



This system has provided several advantages for the University:

- reduced manpower requirements
- reduced installation costs as a variety of vendors' hardware can be used (e.g. Allen Bradley, Carrier, Siemens, Moore, GE, Johnson, Lonworks, Andover)
- finer control of conditioned space
- better planning and utilization of central facilities (e.g. 7 chiller plants) lowering costs

Project statistics	
Location	Philadelphia, PA
No. of Buildings	139
Building area	11,934,000 ft <sup>2</sup>
Air handling units	825
Chilling capacity	3 plants, 48,000 TR
Purchased steam	1 billion lb/yr
I/O points	90,000
Point databases (clusters)	48
Historic trending	over 13,000 points
Expert system modules	24

Since 1998, Dick Engineering Inc. has assisted the University of Pennsylvania in developing and maintaining its building control system.

The building control system features:

- conventional controls from a variety of vendors, located in each of the major buildings
- a SCADA (Supervisor Control and Data Acquisition) system, distributed throughout campus, with central HMI (human-machine interface) stations located in a central Operations Control Center
- fine control for critical research uses, some under FDA regulations
- an expert system to provide energy management
- use of the University's WAN (wide area network) for data communications

Dick Engineering's scope includes:

- 24 h/7 d support
- upgrading the SCADA system to accommodate new HVAC equipment added to the campus (software and hardware)
- development of new communication drivers

