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—Sabi Bivas  
Merck's Senior Systems Associate

**PROJECT AT A GLANCE**

- Project Type:  
HVAC & Security
- Location:  
Whitehouse Station, New Jersey
- Number of Buildings:  
3
- Total Area:  
2 million sq. ft. (186,000 m<sup>2</sup>)
- TAC Equipment Installed:  
48 – CX9200-Series Network Controllers  
16 – Andover Continuum Cyberstation Operator Workstations  
2 – Portable Cyberstation Laptops  
2,200 – TCX850 Terminal Controllers  
50 – SCX920 System Controllers  
100 – LCX810 Local Controllers  
18 – ACX780 Access Controllers  
13 – ACX700 Access Controllers  
31 – IDX800 Intrusion Detection Controllers
- Network:  
Fiber optic based, dedicated Ethernet LAN (TCP/IP protocol) with wireless Ethernet LAN extension (HVAC)  
Stand-alone security network infrastructure (TCP/IP protocol)
- Applications:
  - Space Temperature and Humidity Control
  - Data Center Control and Monitoring
  - Lighting Controls
  - Central Utility Plant Control and Monitoring
  - Fuel Monitoring
  - Door Access Controls
  - Digital Intercoms
  - CCTV Monitoring and Recording
  - Visitor Processing
- Third-Party Equipment and/or Drivers:
  - Secondary annunciation capabilities to Simplex fire alarm system
  - CCTV integration to Pelco CCTV matrix management system
- Number of Controlled Doors:  
160+
- Number of Cardholders:  
6,000
- Total System Points:  
18,000 (HVAC) and 1,200 (Security)
- TAC Representative:  
TAC Systems Integration East, NY/NJ Branch

## A Prescription for Continued Satisfaction — Merck's Worldwide Headquarters Chooses Andover Continuum™

Merck & Co., Inc., an industry leader in research-driven pharmaceutical products and services, showcases a premiere Andover Continuum system in their Whitehouse Station, New Jersey corporate headquarters. This striking hexagon-shaped facility, constructed in 1990 on a 530 acre site, encompasses close to 900,000 square feet (83,613 m<sup>2</sup>) of office facilities, a 700,000 square feet (65,032 m<sup>2</sup>) underground parking garage, a child care facility, and a dedicated central utility plant. The Andover Continuum Building Automation System currently stands at 20,000+ HVAC control points.

Within Merck's corporate headquarters, the Andover Continuum Building Automation System controls over 55 air handling units, more than 2,000 variable air volume terminal units, and 50 zones of automated lighting! In addition, the smoke purge and fire alarm systems are integrated to the Andover Continuum Cyberstation™ front-end. For the central utility plant, TAC provides control and monitoring for three absorber chillers, two electric chillers, four cooling towers, two boilers, and a plate-and-frame heat exchanger. The entire project was engineered and installed by TAC's Systems Integration East NY/NJ Branch.

Merck's Andover Continuum system overlooks nothing. For their state-of-the-art datacenter, Andover Continuum controls and monitors computer room air conditioners, power distribution units, uninterruptible power supplies, substations, automatic transfer switches, and two diesel generators capable of supporting a 3.5MW load. Merck believes that by maximizing the synergies offered via system integration, they can more accurately monitor and fine tune facility performance, reduce service calls, and have a highly consolidated way of tracking energy consumption in the facility.

When it comes to energy tracking, Merck once again goes beyond a traditional approach. The Andover Continuum system monitors over 2,200 utility-related data points (electrical, water, and fuel) and logs the data into an SQL Server database for historical archiving. Merck has used applications such as PowerBuilder to implement



a custom BAS software interface that "mines" this data, producing energy analysis and management reports. From these reports, Merck analyzes raw utility allocations, individual feeder levels, system peaks, historical usage, etc. The information is also used to trend energy profiles within the Merck facility, helping to determine load shedding opportunities, track equipment run-hours for preventive maintenance scheduling, and provide internal utility billing.

The Andover Continuum HVAC control system hosts 16 Cyberstation workstations and 48 CX9000-Series network controllers, all connected by a dedicated fiber optics ethernet LAN. Merck's facilities personnel use 2 additional high-powered portable Cyberstation laptop computers to "plug in" and troubleshoot the Building Automation System from anywhere throughout the huge facility. A wireless ethernet LAN (RF) extends off one of the TAC network nodes, providing real-time, two-way communications to nearby buildings.

Several years after construction, a fully integrated Andover Continuum security management system was added to the facility, replacing the Cardkey system

originally installed during construction. Andover Continuum integrates access control for over 160 doors with card readers, CCTV monitoring, digital intercoms, and 8 Cyberstation workstations, plus a badging station. The Andover Continuum™ security system is also connected to additional Merck "galactic" sites with shared data throughout the region. This capability provides traveling Merck employees with the convenience of gaining access to other Merck sites without having to wait for specific site approval.

To save Merck the expense of installing new card readers and re-badging over 5,000 employees, TAC worked with the existing Cardkey-brand card readers, door hardware, and badges and designed a custom interface board for this project. This custom board was designed specifically by the manufacturer to ensure the most cost effective solution was offered to Merck, which has since upgraded its entire facility to HID proximity card reader.

Sabi Bivas, Merck's Senior Systems Associate, appreciates the reliability and superior performance of Andover Continuum: "What impresses us foremost about Andover Continuum is its well-designed, flexible yet powerful



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user interface and front-end software," says Bivas. "TAC's high technology approach provides us with the best of what's out there. And the company continues to respond to our needs."

Merck's Whitehouse Station headquarters is just one example of a proven track record TAC has maintained with the pharmaceutical giant since 1985. The Systems Integration Division of TAC has also installed systems at nine other sites, including Rahway New Jersey, West Point Pennsylvania, Arecibo Puerto Rico, and Pomezia, Italy.

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