



We provided TAC with our requirements and they came up with a great plan. TAC building management systems take care of 40,000 points of control — lighting, heating, air conditioning, access control and fire alarm monitoring. TAC is the brain that monitors everything in the building.

*Lou Capozzi
Facilities Manager
Genzyme Center*

PROJECT AT A GLANCE

Project Type:
Integrated Building Controls

Location:
Cambridge, Massachusetts, USA

Number of Buildings:
One 12-Story Office Building

Leadership in Energy and Environmental Design (LEED®):
Rating: Platinum Level

Applications:
Integrated Building Automation,
Lighting and Access; Andover Report Suite

Total System Points: 40,000

Equipment Installed:
Andover Continuum

TAC Branch:
Boston, Massachusetts
Systems Integration Group

Genzyme Center

Genzyme's corporate headquarters is a leading-edge green facility powered by renewable energy sources and controlled by integrated building systems that create a functional and environmentally conscious work environment.

THE CHALLENGE

Genzyme, a world leader in biotechnology, wanted its new corporate headquarters to reflect the company's mission of making a positive impact on people's lives. So the design for Genzyme Center focused on not only lowering operational, maintenance, and energy costs, but also on providing a work environment that honors employees' need for natural light and fresh air.

The environmental requirements translated into a variety of design specifications, such as movable mirrors placed on the roof to direct sunlight inside, blinds programmed to follow the sun and then close at night, and windows that employees could open to let in fresh air. And that was just the beginning.

When Genzyme requested proposals for an integrated systems solution to fulfill the building design's objectives, four companies responded. Genzyme awarded the project to the Systems Integration Group of TAC® because it demonstrated its ability to handle the project's scope and had the expertise to integrate systems from multiple manufacturers.

The project team faced a number of challenges – from integrating different systems and leveraging the corporate virtual private network (VPN) to adjusting to cultural differences and communicating among far-flung team members in Germany, Massachusetts, New York and Los Angeles.

THE SOLUTION

The Systems Integration Group proposed a building controls solution that leveraged Andover Continuum™ products to control the main building and Andover Report Suite to measure and report energy trends. TAC's integrated system manages 40,000 points of control, including lighting, heating, air conditioning, and fire alarm monitoring.

CUSTOMER BENEFITS

- Significant energy savings
- Interoperability among multiple systems
- Use of existing network resources
- Ease of use and maintenance

Genzyme Center

The Andover Continuum system is fully programmable and leverages a Windows® front-end workstation connected directly to Genzyme's Ethernet VPN. This configuration enables Genzyme to monitor and manage a wide range of operations – from HVAC equipment, chiller and boiler interfaces, carbon monoxide/carbon dioxide levels and rainwater collection, to window, blind, and door controls, artificial lighting and building/tenant metering.



Andover Continuum floor controllers interface with lighting components to yield significant savings by eliminating the need for a separate network system to handle the lighting. In addition, TAC's Smart Sensors give employees individual room control for HVAC and lighting.

According to Genzyme Center facilities manager Lou Capozzi, integration was key to the success of the project. "It controls the building process. TAC came up with a great plan. They catered to us and they did a great job, I have to admit."

SOPHISTICATED EQUIPMENT WORKING IN CONCERT

In this state-of-the-art green building, 900 stainless steel blinds are monitored on the TAC system. The blinds reflect the sunlight off the first two rows of ceiling panels, which are also stainless steel. As the sun moves, the blinds tilt to reflect more sunlight into the offices.

Even more light is brought into the building by seven 5 ft. x 5 ft. rotating mirrors called heliostats, located on the roof of the building. The heliostats follow the sun and reflect the light through prisms, which in turn shines the light onto chandeliers that deliver sunlight to the entire building.

TAC's building management system is the brain that monitors everything in the building, including the mirrors and blinds, even though they operate on separate software. "Having the BMS enabled us to have two less technicians for the building. It monitors everything 24-hours a day and if anything goes wrong it sends out a message," reports Mr. Capozzi.

The TAC system also flushes old air out of the building. When the temperature is around 70 degrees and the wind is less than 5 mph. At 11 p.m. and 2 a.m., the BMS opens all the windows, pushes the old air out of the building, and takes in new air.

The crowning jewel of the Genzyme Center is its "green roof", with 6,000 sq. ft. of plant life that provides insulation, absorbs water and slows the amount of water going down the building's drains. Much of that rainwater is filtered, captured and stored in four 200-gallon tanks on the roof, and is used to water plants in the summer. Again, the TAC BMS monitors this process.

THE BOTTOM LINE

Genzyme Center relies on integrated building automation systems to lower operational and energy costs while maximizing natural energy sources such as wind, rain and natural light. And, by designing a facility that provides fresh air and natural light, Genzyme expects the payback on its investment to lead to employees who are happy and motivated at work. Their efforts to champion green standards have led to national recognition as a showcase green facility.

The Genzyme Center earned a Platinum certification, the highest rating issued by the U.S. Green Building Council, under the Council's LEED (Leadership in Energy and Environmental Design) Green Building Rating System™.

Nevertheless, management continues to benchmark efficiencies and look for new ways to conserve energy and streamline operations. TAC plays an active, ongoing role in this. As Mr. Capozzi states, "TAC's support is great. The company's ongoing role is to help us with any bugs that come up with the BMS system. TAC supports us and backs us up any time we have an issue. TAC has been a great partner."