

# Montgomery-Ames Associates

*Electrical Manufacturers' Representatives since 1930 781-910-7015*

**P.O. Box 667- 24 Larch St. Wareham, MA 02571**

## Computer Based Fire Alarm Monitoring & Automation

CPU TYPE Manufacturer MODEL # SUPPLIER	PROJECT LOCATION	Description No of buildings	Fire Alarm reporting	Lighting monitor control	Security Card access	Misc.	Automation HVAC ENERGY
Apple 2E AMX	Raytheon Andover, MA	Missile plant 4k workers	X	X			
Apple 2E American Multiplex	Mass D.O.T. Headquarters Boston, Mass	Massachusetts Department of Transportation	X				
IBM-PC 286	NYNEX WORLD HEADQUARTERS Middleton, Mass	1 Complete building automation system	X 50 zones With voice	X 900 relays with 1200 zones VIA DTMF	X 1000 cards 120 zones	X Halon Water detection	X Westinghouse PONI interface & HVAC

CPU TYPE Manufacturer MODEL # SUPPLIER Digital Equipment	PROJECT LOCATION	Description No of buildings	Fire Alarm reporting	Lighting monitor control	Security Card access	Misc.	Automation HVAC ENERGY
PDP-8 / 11 Digital /D.E.C. AMX	World Trade Center New York, NY	2 BUILDINGS 110 FOORS 5 M SQ FT EACH	5000 ZONES	SWITCH 10 MW	1000 Z		Load Shedding
PDP-8 / 11 Digital Equip American Multiplex	General Electric GE World Headquarters Fairfield, Ct	Complete integration Fire Alarm reporting	X	X	X		X
PDP-11 D.E.C. Kidde Automated	Pratt &Whitney Hartford, CT Portland, ME	10 M sq feet 5 M sq feet	X		X		
PDP-11 D.E.C. Kidde Automated	Bank of Boston Headquarters Boston, MA	46 fire alarm 46 card access transponders	X		X		
DIGITAL (DEC) Kidde Automated	Spitbrook, NH Franklin, MASS Marlboro, MASS	Digital Equipment Corp. SINGLE BUILDINGS D.E.C, PDP-11	X X X	X			X
DIGITAL EQUIP. PDP-11 C.S.E.	MBTA Boston TA <b>First transit computerized automation</b>	<b>20 MILE TRAIN TRACK ANNUCIATION &amp; train positioning on green line preventing crashes</b>				X	

**Keltron installations with a Central UL 864 listed CPU operating a central receiving station with Windows based alerting, dispatch and recording from remote fire alarm connected transceivers via telephony, radio or IP.**

**Colleges:**

**Syracuse University, Smith College, Colgate, Brandeis, UNH, Dartmouth, Middlebury, Roger Williams, UMASS Dartmouth see attached Project Summary**

**SUNY :( Cortland, West Chester, Ulster, Maritime)**

**State Authorities:**

**NY Port Authority NY & NJ, NYS OGS, NYCPD**

**NYC Transit, Jamaica Yards wireless, 2<sup>nd</sup> Ave coded reporting station**

**Municipal receivers**

**City of Long Beach, LI, NY, Northampton, MA, Fall River, MA.**

**Proprietary:**

**Harvard Medical School Roxbury Housing, Roxbury, MA**

**Castle Square Boston complex, Boston, MA**

**Consolidated Edison , NY , NY see attached Project Summary**

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## Case Study



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## Keltron Provides a Mission Critical Solution for Con Edison

### Overview

For more than 180 years, Consolidated Edison (Con Edison) has maintained an unwavering commitment to delivering the energy that keeps New York City and Westchester County running. The Con Edison electric distribution system, the most reliable in the country, serves nearly nine million residents. The company also provides natural gas to more than one million customers in Manhattan, the Bronx, parts of Queens and most of Westchester County. In addition, Con Edison delivers steam to Manhattan.

How, then, do you seamlessly upgrade one of the world's largest utilities' security monitoring systems in a post-911 world? Breaches in security that could interrupt electric, gas or steam service are not an option.

### The challenge

Con Edison's Corporate Security team acknowledged that its infrastructure and customer demands provided challenges and after researching and reviewing the systems available, Keltron Corporation provided the best and most cost-effective solution, said Scott M. Gross, systems specialist for Corporate Security.

Keltron's experience in fire and life safety and its understanding and adherence to the codes and standards that guide the industry gave them a definite advantage. Con Edison requires that level of competency and compliance throughout the company, said Gross.

"We wanted to bring the benefits of a fully supervised, redundant monitoring system for our intrusion detection," he said.

### Life safety and more

The Keltron LS 7000 Life Safety Event Management System monitors all Con Edison's divisions, substation operations, transmission operations and area substations that serve its customers. The system provides fast, dependable and universally compatible life safety and security event management. It met Con Edison's critical needs with the fastest, most direct and efficient access to security information at Con Edison's new security operations system.

"The Keltron LS 7000 system's ability to respond quickly to events is extremely important to Con Edison as they rely on Keltron's equipment to help them efficiently respond to incidents," said Keltron's product manager Ron Tino. "The ability of the Keltron LS 7000 to increase efficiency by providing dispatchers with precise, detailed and relevant event information is a major system benefit."

**"We wanted to bring the benefits of a fully supervised, redundant monitoring system for our intrusion detection."**

**Scott M. Gross  
Systems Specialist**

The Con Edison electric distribution system covers more than 600 square miles in New York City and Westchester County. Customers in the Con Edison service area are using 20 percent more electricity than they did 10 years ago. They expect demand to rise another 10 percent in the next decade.

The company also provides natural gas to more than one million customers and the average amount of gas that travels through Con Edison's gas system annually could fill the Empire State Building nearly 6,100 times.

In addition, Con Edison delivers steam to more than 1,800 customers in Manhattan, from the Battery to 96th Street. Steam traveling through Con Edison's system is used to heat and cool some of New York's most famous addresses - the United Nations complex, the Empire State Building and the Metropolitan Museum of Art among others.

Because of its diversity of services, Con Edison's presence at ports requires the company to adhere to the U.S. Coast Guard's three-tiered system of Maritime Security (MARSEC) levels consistent with the Department of Homeland Security's Homeland Security Advisory System (HSAS). MARSEC levels are set to reflect the prevailing threat environment to the marine elements of the national transportation system, including ports, vessels, facilities and critical assets and infrastructure located on or adjacent to waters subject to the jurisdiction of the U.S.

There are the residential customer needs as well. In 2007, Con Edison delivered a record amount of electricity to customers in New York City and Westchester County. Last year's usage of 62,591 gigawatt hours (GWh) eclipsed the record of 61,608 GWh set in 200, and is more than 23 percent higher than the 50,837 GWh used in 1997.

Just as Con Edison easily breaks down electric use to gigawatt hours, the Keltron LS 7000 provides its operator with the essential details of event type, location hazards, and other critical information. The Keltron LS 7000 can interface with most fire and security panel models and brands and can monitor alarms using any combination of communications infrastructure from direct wire to distributed multiplex, active network radio and even Ethernet. Based on previous installations, dispatchers have found the Keltron LS 7000 intuitive to use - it uses standard Windows UI - and appreciate the layout of the user interface.

**Engineering experience**

"We have been working on a security monitoring system for a number of years but the events of September 11, 2001 deemed it necessary to increase our efforts three fold. That led to the creation of the security operations center for Con Edison," said Gross. He was part of the team that evaluated the monitoring systems available in the marketplace.

The Keltron LS 7000 system provides the Con Edison system operators with event type, location, hazards and other critical information. It also offers the most appropriate event response strategy. Also fitting Con Edison's security needs was the Keltron LS 7000's ability to provide centralized on-site monitoring of remote facilities.

"The biggest benefit to Con Edison was the system's ability to receive alarms from their existing infrastructure - its universal compatibility," said Tino. "Of nearly equal importance was being able to configure the system for full redundancy and the efficiency and accuracy of the dispatcher information."

**History of security needs**

In planning its improvements, Con Edison developed an engineering specification that included compliance with New York City Building Codes, electrical codes and the requirements of the Americans with Disabilities Act. Initially, their system was single vendor/sole source for fire, burglary and access control. "Their corporate security department design and implementation team wanted everything standardized so that all new construction would have the same systems as the existing buildings," said Gross.

The first standardized systems were digital video recorder (DVR) based. In 2001, they added access control accountability and developed roll call and evacuation systems. Then they added unmanned environments and substations to the monitored divisions. All of Con Edison's facilities are backed up by generators and internal uninterruptible power supplies.

"Highly important to our customers are the flexible and multi-dimensional dispatching features, the streamlined programming features and the system's universal compatibility with a wide range of existing panels and signaling technologies," Tino said. "Most of our customers find enormous value in the system's ability to direct different types of events to different dispatchers depending upon their origin, jurisdiction, or type (alarms versus troubles or supervisory conditions)."

When it came time to tie the entire system into a central monitoring system, the Keltron LS 7000 fit Con Edison's diverse needs. Specifically, the system monitors Con Edison's intrusion alarm system that includes its entire system of access control and motion sensors at its properties and the panic and duress alarms at Con Edison's Irving Place corporate headquarters. "That's between 150 to 200 points," added Gross, "and we see that expanding."

"The system's ability to interface with diverse signaling equipment from many otherwise incompatible manufacturers and technologies to create a single system was highly valuable," Tino commented. "The Keltron LS 7000 also enables various stakeholders to view the system information using multiple workstations. Neither option was possible with the existing equipment."

The Keltron Life Safety Event Management System is situated in a command center that is operational 24/7/365 and has five separate workstations, which provide multiple levels of redundancy. The multiple workstations also assist the dispatchers in their work. For example, if the system receives many alarms at once a dispatcher acknowledges a given alarm, he/she owns it and therefore no one else needs to work on it.

**Future needs and plans**

Future expansion of the system will likely include fire and life safety monitoring with the new security operations center and throughout the corporation. Keltron's system complies with NFPA 72 the National Fire Alarm Code requirements for fire and life safety.

Keltron Corporation has a unique understanding of market requirements and technology and long-term relationship with Underwriters Laboratories which enables Keltron to provide fully UL-listed systems to the municipal market.

This solution is flexible and will easily transition into a fire system when Con Edison is ready. "Con Edison can use all the same equipment, making only minimal changes to the programming," Tino said.

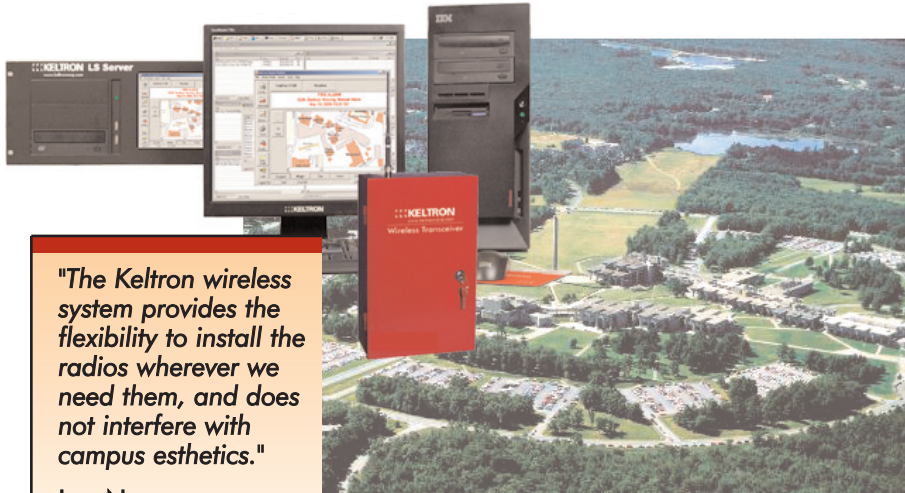
For Con Edison and a host of other high-end users, the Keltron LS 7000 meets the mission critical needs of the life safety industry by providing direct and efficient access to event information and enabling the fastest response to critical fire and security situations.

Keltron develops and manufactures universally-compatible, UL listed life safety event management systems for the municipal and proprietary markets. Solutions include Ethernet signaling systems, active network radio systems, distributed multiplex systems, digital communicator/receiver systems, and direct wire systems. This document is not intended for installation or maintenance purposes. For more information visit [www.keltroncorp.com](http://www.keltroncorp.com) or contact us at 781-894-8710.

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**Scott Gross**

## University of Massachusetts at Dartmouth



*"The Keltron wireless system provides the flexibility to install the radios wherever we need them, and does not interfere with campus esthetics."*

Lee Nason  
Director of Facilities  
Planning Design &  
Construction

New construction is designed to blend into the campus, maintaining the integrity of Rudolph's vision. Throughout the campus are mechanical and electronic systems that support the people who use the buildings and are designed to avoid interference with the architectural integrity of the campus.

### Overview

The Dartmouth campus of the University of Massachusetts was designed by architect Paul Rudolph. The unique design reflects a combination of esthetics and convenience and features lively, rugged buildings with board-finished concrete structure exposed with infills of glass and fluted block to form building envelopes.

### The challenge

The main priority for the UMass Dartmouth Facilities Department is the safety of the university's students and employees. "The motto of the department is 'Don't compromise safety - even minutes of delay can mean disaster'", says Lee Nason, the University's Director of Facilities Planning Design and Construction. It is the responsibility of Nason and her team to ensure facility integrity and occupants' safety and security.

When new dormitories and aggressive University expansion plans required an upgrade of the aging campus fire alarm monitoring system, Nason began to search for a system that would provide three important benefits:

- Fast, accurate alarm information to the on-campus dispatch station
- A way to transmit information without additional campus construction
- Cost-effective use of the existing systems to meet budget constraints

### The solution

In conjunction with the engineering firm of Garcia, Galuska, DeSousa, Inc., hired to research and recommend an architecturally-compliant solution, Nason and lead Project Manager, Peter Geldmacher determined that a UL-listed Keltron active network radio system with a Keltron LS 7000 life safety event management head end was the optimal system for UMass Dartmouth.

- The University's existing system used non-code-compliant telephone lines to transmit signals from the fire alarm control panels to the digital alarm communicator receiver. Any new construction would require costly trenching and wiring for private telephone lines to enable the receiver to connect with the control panels. "This would disrupt the 700-acre campus, demolishing the landscaping and potentially disturbing the 30-year-old original buildings" noted Nason, "the Keltron wireless system provides the flexibility to install the radios wherever we need them, and does not interfere with campus esthetics."

*"The Keltron LS 7000 gives the dispatcher a wealth of accurate, detailed information with which to guide the first responders."*

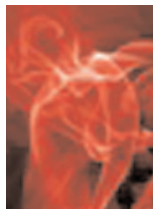
Peter Geldmacher  
Lead Project  
Manager

- Another key requirement for UMass Dartmouth's new system was to replace the old zone system with a new point-addressable one. The old zone system transmitted only general information and the responders had to check every device in the zone - particularly inefficient in the case of false alarms that are prevalent on college campuses. With point-addressable monitoring, the dispatcher can observe and communicate exactly which device is in alarm and exactly where it is located, saving the fire department substantial time and effort. "The radios instantly transmit point-addressable information from the control panels to the dispatch station," says Geldmacher, "and the Keltron LS 7000 gives the dispatcher a wealth of accurate, detailed information with which to guide the first responders.
- Like most state-funded institutions, UMass Dartmouth is subject to public scrutiny and budget constraints. "Our budget did not allow for an entire overhaul of every device, panel and monitoring system all at one time", said Nason, "the University needed a system to communicate with both existing fire alarm control panels and new ones to enable a phased transition over a period of months and years." The universally compatible Keltron system can interface with most brands of fire alarm control panels and can monitor alarms using any combination of communications infrastructure from direct wire to multiplex, radio and even Ethernet. Further reducing expense, the Keltron radio system would save on both ongoing monthly telephone line charges and the capital expense of installing wires throughout the campus.

In the spring of 2006, UMass Dartmouth purchased a Keltron LS 7000 and active network radio system from Alarm Applications and began installing the radio system in the new dormitories and academic buildings.

### Added value and future development

#### Carbon monoxide monitoring



At the same time UMass Dartmouth was researching a new fire alarm monitoring system, the Massachusetts legislature was about to pass Nicole's Law - all residential buildings with a fuel burning appliances must have carbon monoxide (CO) detectors, and in the case of a campus, they must be monitored. "Our choice was to install individual detectors in at least 1000 rooms with a high cost of installation and maintenance, or to monitor system detectors in the immediate area of the fuel burning appliances using the Keltron system," observed Nason, "using the Keltron system saved UMass Dartmouth about \$250,000."

*"Our choice was to install individual detectors in at least 1000 rooms with a high cost of installation and maintenance, or to monitor system detectors in the immediate area of the fuel burning appliances using the Keltron system which saved UMass Dartmouth about \$250,000."*  
**Lee Nason**

UMass Dartmouth's fire alarm monitoring system will proceed with the existing dorms and then will extend throughout the campus until all buildings tie into the Keltron point addressable radio system, monitored at the campus police department. With student attendance approaching 10,000 and new buildings in their planning stages, Nason expects additional workstations and continuing upgrades in the not-so-distant future.

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