



TEC NEWS QUARTERLY



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In the Business of Travel and Tourism, Facility Management is not a Luxury

What does it take to ensure the best possible guest experience? That's the evolving challenge confronting hospitality managers in the travel and tourism industry. Innumerable areas of high environmental sensitivity exist within all aspects of hospitality management. In particular, the hotel industry essentially commands a great deal of ambient control. Hoteliers need to

accommodate their patrons with great service, and optimal performance from building systems and equipment. What's behind the walls of a hotel can have a direct impact on its guests. They remember how beautiful the lobby is. They also remember noise, temperature and ventilation problems.



The Westin Hotel at Times Square is New York City's newest triumph of architecture and art. Located at 43rd Street and Eight Avenue, flanking the E-Walk, a 200,000-square-foot entertainment and retail complex, the Westin is an impressive addition to the travel and tourism industry in New York. Developed, built, and owned by affiliates of Tishman Realty & Construction Corporation, and under the management of Westin Hotels & Resorts, a subsidiary of Starwood Hotels & Resorts Worldwide Inc., it is the largest hotel development in New York City in 17 years. Designed by world-renowned Arquitectonica of Miami, the luxurious hotel offers 863 guestrooms and suites, meeting facilities, food and beverage lounges, and a health club boasting Arquitectonica's innovative design statements.

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We specialize in:

- HVAC SYSTEM CONTROLS
- OPEN/INTEROPERABLE TECHNOLOGY
- SYSTEMS INTEGRATION
- FIRE/SMOKE CONTROLS

What's New?

U.S. Green Building Council -

T.E.C. Systems, Inc. has joined the U.S. Green Building Council to complement internal and external efforts in promoting environmental responsiveness in the building industry. The council represents an impressive group of leaders dedicated to the construction of environmentally responsible, profitable and healthy places to live and work. "Council members are leading a national consensus for producing a new generation of buildings that deliver high performance inside and out. Our members work together to develop design guidelines, policy positions, educational tools and industry standards—including the LEED Green Building Rating System™—that support the adoption of sustainable design and building practices," ascribed on the organization's website. For more information, and to see how you can benefit from the movement, please contact T.E.C. Systems, Inc. or log on to <http://www.usgbc.org>.

LonWorld 2002 - Attended by integrators, developers, OEMS specifiers, energy providers, service providers, utility managers and end users, LonWorld's annual conference is the world's largest exhibition focused on the technology and business of networking everyday devices. Presenters and panelists from the building, home, transportation, and industrial automation industries delivered perspectives on technology and business trends in the "LonWorks industry." LonWorld 2002 also featured the world's leading exhibition of LonWorks projects and products. The exhibition provided an opportunity for attendees to meet first hand with the vendors who are providing the latest developments and trends with LonWorks technology.

Museum of Modern Art (MoMA) - The Museum of Modern

Industry Events

- **National Facilities Management & Technology Conference**
March 18 - 20, 2003
Baltimore, Maryland
- **U.S. Green Building Council Federal Summit**
April 29, 2003
Austin, Texas, USA

Art's Building Project, under the management of AMEC Construction, includes the renovation of the existing facility, and construction of two new steel frame buildings for office and gallery use. AMEC has engaged T.E.C. Systems, Inc. to provide the Museum with a Honeywell Building Management and Automatic Temperature Control System. T.E.C. will provide local, Stand-alone Honeywell Direct Digital Control Units as well as Fire and Smoke Damper Controls and a Smoke Purge inter-



Echelon Corporation
Presenting at LonWorld 2002

face.

Construction of the new museum is expected to be complete in the spring of 2004. Altieri Sebor Weber, LLC are the consulting engineers on this project.

Harlem Health Center - T.E.C. Systems, Inc., via a subcontract from United Air Conditioning Corp., has been selected as the Building Automation Sys-

tem Contractor to install a state of the art Building Management System (BMS) designed by Edwards & Zuck P.C., at The NYC Trades Council and Hotel Association of NYC, Inc.'s new health care facility located in Harlem.

Project highlights, includes an 8-story (110, 000 Sq.ft) new health care center to serve the health and dental needs of union members and their families. T.E.C.'s primary responsibilities includes the integration and installation of a BMS engineered to the American Auto-Matrix Control System platform.

American Auto-Matrix (AAM)

- AAM has been purchased by a group of private U.S. investors led by AAM's current CEO, Paul Jordan. Jordan Acquisition Group, LLC purchased the company from Vislink plc of the UK. "The acquisition allows AAM to distinguish itself from its competitors in the building automation industry, many of which are foreign-owned," says the new owner. Prior to Joining American Auto-Matrix, Mr. Jordan was head of Jordan Manufacturing Solutions in Caledonia, Michigan, which he founded in 1998. Throughout his 22 years of extensive hands-on management experience in the manufacturing industry, Mr. Jordan has served as senior vice president for Siebe Environmental Controls, now Invensys, in Rockford, IL. He has also consulted in many areas including Strategic Planning, Product Development, and Lean Manufacturing. As CEO, Mr. Jordan assumes leadership and responsibility for all facets for the continued growth of American Auto-Matrix operations.

Saint Vincent's Staten Island Hospital Improves Building Efficiency and Patient Comfort

In health care, comfort and convenience are of paramount importance. To complement its professional services in caring for the infirm, Saint Vincent's Staten Island hospital instituted an upgrade to its aging building cooling



system, to a modern configuration of increased reliability, and comfort.

In the days of its infancy, maintaining a 74-bed facility, the hospital provided services across the continuum of care to people of all ages throughout the New York metropolitan area. Through years of expansions it has steadily grown to one of the areas most comprehensive healthcare providers, and to its current bed complement of 440. In 2001, inadequate output from several absorption chillers used to supply chilled water to the complex's three buildings prompted a system-wide audit of the cooling infrastructure. The review uncovered plausible threats to the hospital's mission to treat within a comfortable physical environment.

Not surprising, the compromising factor contributing to the system's inefficiency lied within its antiquated design. It consisted of independent chilled-water systems, each with its own cooling towers, pumps, and controls feeding separate distribution systems to the three outlying campus buildings. Even under low-load conditions, all the systems had to

continue operating—an extremely inefficient process. Furthermore, all systems were independent. Should one system fail, there was no way to provide backup through another system.

In recognition of its achievements in energy efficiency and conservation, Saint Vincent charged Con Edison Solutions, of Westchester, with the task of spearheading the design and installation of a high-efficiency central chilled water plant.

Challenges:

- Develop a pleasurable, and caring quality environment to complement the hospital's services in healing the human body, mind and spirit.
- Enhance operational efficiency, flexibility, and redundancy to reduce operating time of chillers.
- Conserve energy while maintaining patient, staff and visitor comfort at all times.

Solutions:

- Upgrade to a computerized system that allows engineers to operate the facility from a central location.
- Consolidate facility operations management by installing a LonWorks based Facility Management System.
- Implement energy conservation measures by improving chillers, variable speed pumps, and cooling towers.

To execute these changes, Con Edison retained the services of AKF Engineers, LLP, of New York City, experienced in the area of mechanical and electrical systems design, and JDP Mechanical, LLC, of Astoria, qualified in the area of mechanical systems installations. Two York 600-ton natural gas engine-driven chillers were added to the existing Trane

600-ton steam absorption chiller, providing up to 4320 gallons per minute of chilled water to the facility's air handling equipment. Eleven constant-volume pumps were replaced with three 100-horsepower chilled water pumps and three 50-horsepower condenser water pumps along with their Danfoss variable-frequency drives to meet any flow requirements.

To complement the newly installed components, Con Edison turned with confidence to T.E.C. Systems Inc. to provide a cost-effective method for facilitating the harmonious control of the mechanical systems. To synchronize all the different mechanical systems, the company designed and installed an integrated open protocol system utilizing LonWorks technology, developed by Echelon Corporation. T.E.C. has been an Echelon Authorized Network Integrator since 1995 with



dozens of LonWorks based installations to its credit.

“LonWorks technology offers a nonproprietary architecture that provides an open network to which many systems from various suppliers can be easily integrated—initially, and at anytime in the future,” says Tak Eng, the project

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Facility Management is not a luxury

Continued from cover

To enhance standard amenities, T.E.C. Systems, Inc. was contracted and imparted with the responsibility of providing a comprehensive, flexible control-based solution for the economical operation of the Westin with the objective of offering guests the maximum amount of safety and comfort. T.E.C. Systems isolated two primary areas of concentration.

1. Avoid cooling capacity shortfalls during peak seasons.
2. Monitor, control, and centralize multiple environments to accommodate a variety of visitors.

Post consultation with Jaros Baum & Bolles, the Mechanical, Electrical and Plumbing Engineer on the project, a solution was developed to implement a Honeywell EXCEL-5000 Building Management System (BMS) to integrate and regulate the central plant HVAC equipment. To complement the BMS, T.E.C. Systems would furnish and install an operator workstation to monitor, control, and centralize the various systems.

In instituting the specified solutions, primary, secondary chilled and hot water distribution systems were put into operation. The chilled and condenser water system consists of one

electric drive chiller, two gas-fired absorption type chillers with heat generators, three cooling towers furnish with variable frequency drives, three plate-



and-frame heat exchangers, three constant speed condenser water pumps, and three variable speed chilled water pumps. The secondary chilled water system, serving the guest room fan coil units, consists of two variable speed pumps. The flexibility of the overall system will allow it to operate in multiple modes as selected by the operator, based upon outdoor wet bulb temperature, and or desired condenser water set-point temperature.

The primary hot water system consists of two heat generators as part of the absorption type chillers and two variable speed hot water pumps. The

secondary hot water system consists of two variable speed pumps.

Fourteen Direct Digital Controlled (DDC) Air Handling, and Heating & Ventilation units feed conditioned air to multiple meeting rooms, ballrooms, atriums, lobbies, common areas, and a fitness center. Honeywell EXCEL-10 controlled Variable Air Volume boxes provide optimum temperature control to these areas.

To bring together the installed components, T.E.C. engineered and instituted an integrated protocol system customized to Honeywell's EXCEL-5000 Building Management System. The benefits of the system are threefold.

1. Maximize efficiency of equipment and ensure control of environments.
2. Optimize the delivery of air of moderate cleanliness, temperature, and humidity.
3. Improve operator productivity and response time due to centralized control.

The EXCEL-5000 system also provides an important life safety function for the facility. 225 fire and smoke control dampers and associated smoke exhaust fans, controlled from a fireman's smoke control panel located on the lobby level, allows for the expeditious purging of smoke in the event of a fire.

The BMS is monitored from a central location, via a Honeywell XBS-Graphical User Interface (GUI). Through the GUI, facility engineers, and maintenance staff can access alarms, display trends, and make set-point adjustments.

The Westin New York Hotel at Times Square exemplifies a certain perception of the city carried to its frenetic extremes. Thanks to its innovative design, and environmentally efficient facilities, it is destined to become a New York City landmark ■



“Paging Dr. Lon...”

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manager with Con Edison. “This capability allows “best-of-breed” selection of components without the necessity to overlay conventional control components to operate systems.” Direct network connection to the chillers, pumps, and outlying sensors facilitates seamless sharing of data and control information.

Results:

- Achieved greater energy efficiency from the mechanical system upgrades and LonWorks Facility Management System.
- Increased energy tracking capabilities and system monitoring functions while maintaining system uptime.
- Increased equipment reliability, flexibility and cost effectiveness.

The LonWorks network includes over 100 total connections to system components including the York chillers, Danfoss variable frequency drives, Echelon LonPoint Modules, Neurologic

temperature and humidity sensors. All networked devices came factory furnished



with LonWorks FT-10 free topology transceivers. This polarity insensitive 78kb network facilitates communication between all connected devices and the Graphical User Interface. T.E.C. Systems was able to reuse some existing twisted pair cabling, with minimal new cabling required. Because a LonWorks network provides peer-to-peer communication between devices, the need for homerun cabling was eliminated, substantially

reducing wiring and labor costs. Prior to the installation of the LonWorks system, facility personnel had to physically go to each component to monitor and manage it. Today, detailed information on the status of each component is displayed on a workstation equip with an LNS based Honeywell SymmetrE Graphical User Interface and Echelon LonMaker management software. Maintenance staff can view alarms, display trends, and make set-point adjustments without leaving their office.

These mechanical, electrical, and plumbing upgrades, coupled with a system-wide emphasis on technology and quality will certainly complement St. Vincent’s mission to treat with respect, integrity compassion, and excellence. As the hospital approaches its centennial commemoration, such investments in its facilities will serve it well into the future ■

2002 - In Review

As the days and weeks of 2003 increases, it’s time to step back and take stock. T.E.C. Systems enjoyed a great year partnering with some of the best and brightest leaders, and businesses in the New York Metropolitan area. T.E.C.’s unrelenting focus on its clients is well recognized. That’s why New York Construction News magazine awarded several projects engaged by the company as the best there were in 2002 throughout the New York Metropolitan area. The following is a list of those award-winning projects.

- **South Court Building at the New York Public Library** – Institutional Project of the Year
- **Polytechnic University’s Donald F. & Mildred Topp Othmer Residence Hall** – Residential Project of the Year
- **360 Madison Avenue** – Office Project of the Year
- **The Westin New York Hotel at Times Square** – Hospitality Project of the Year
- **The Prada-Soho** – Interior Design/Fitout Project of the Year
- **Airtrain at John F. Kennedy International Airport** – Airport Project of the Year

For more information on the specified projects please see New York Construction News’ December 2002 issue, and for more on T.E.C. Systems, Inc., log on to www.tec-system.com

In the Spotlight

Your Knowledge

Have you ever purchased a product only to find out you could not figure out how to work it properly? You found that the instruction manual was terribly written? That is one reason why people still cannot figure out how to stop the 12:00 from blinking on their video recorder (VCR).

Well, whether you are a new customer, or enhancing a current system, the world's leading Automation and Control Solutions' companies understands that it is important to train their customers on how to use their products and how to apply them to their benefit. To ensure their own success and to meet the demands of newly emerging technologies and networking capabilities, companies such as Honeywell, Echelon, and American Auto-Matrix have embarked on an exciting series of training programs: new on-line resources, on site training, laboratory sessions and more.

Through innovative teaching, research and service, these companies are supplying the tools, and skills that you need to be expert professionals in all aspects pertaining to their products and services.

Honeywell Authorized Trainer Program - C 859 Excel CARE 4.0/SymmetrE R200 Course

Auto-Assist by American Auto-Matrix - BACnet Workshop

Echelon Corporation - Specifying Open Systems Workshop



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