ShopTalk
Plant Operation Support Consortium
Volume 14, Number 4 Winter 2010

Olympic College Boosts Communication and Emergency Alert Systems

By Phil Partington, Consortium Staff

What started as a simple process to boost two-way radio communications on its Bremerton campus has evolved, enhancing communication between all three Olympic College campuses, as well as vastly improving the college's emergency alert system.

August 2007 marked the beginning of this innovative endeavor when Olympic College contracted with Puget Sound Instrument Company, Inc. (PSI) to help establish a plan to upgrade the existing communication system then in place in Bremerton. "The first goal was to improve coverage within the Bremerton campus – to virtually eliminate 'dead spots' on the campus," said Shawn Fuller, PSI account representative.

Once it was learned that Olympic College has a great fiber-optic network, a plan was developed to bridge communication gaps between the Bremerton, Poulsbo and Shelton campuses through a Radio over Internet Protocol (RoIP) solution. RoIP is similar to VoIP (Voice over Internet Protocol) phone calls, but augments two-way radio communications. Creating this link has allowed the campuses to communicate with each other seamlessly – regardless of location.

Bill Wilkie, Olympic College, demonstrates a new custom-built communication and emergency alert system that connects with the campus computer interface.

Olympic College and PSI took this one step further to create a campus-wide emergency notification system. PSI custom-engineered the system, which leverages the newly upgraded two-way radio system and allows for voice messages to be transmitted over a public address system using a two-way radio subscriber unit and Dual-Tone Multi-Frequency

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ShopTalk

Washington State University Extension Energy Program Plant Operations Support Consortium

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In this Issue:

ShopTalk is a quarterly electronic newsletter of the Plant Operations Support (POS) Consortium, providing information focused on facility operations. We welcome feedback from readers. To provide feedback or to subscribe to the POS electronic listserv, email us at *PlantOps@energy.wsu.edu*.

Archived issues of ***ShopTalk*** are available at: *www.energy.wsu.edu/apps/PlantOperations/NewsletterArchive.aspx*

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Shop Notes

By Bob MacKenzie, Consortium Manager

The Consortium turned 14 this January! Can you believe we've been in operation that long? It is a testament to your attention to detail, conscientiousness and selfless attitudes. You have proven that collaborative facilities management is just good business and a great means to weather tough economic times. It's how our respective stakeholders have saved more than $55 million since 1996.

This issue of ***Shop Talk*** is reflective of the diversity and strength of your family of facilities managers. Two articles offer views on the timely and critical topic of security: one article focusing on facilities security at Olympic College, and the other on physical/personal safety from a K-12 school perspective. We appreciate the input of Bill Wilkie, Olympic College, and Kraig Rosencrantz, Snohomish School District, for their well-grounded views.

We are also premiering what may become a recurring segment of ***Shop Talk*** – a Q&A answered by an energy expert from the WSU Extension Energy Program. This first Q&A addresses the highly relevant question of "Induction vs. LED Street Lighting."

Rand Mackenzie, no relation to yours truly, heads the facilities management functions of the fabulous Vancouver Convention Centre in British Columbia. Phil Partington interviewed Rand as the facility gears up for the XXI Olympic Winter Games. This is facilities management under severe constraints and time pressures, and sure to be a good read.

Bob MacKenzie

Secure your lodging now for the ***Energy/Facilities Connections Conference***, taking place May 12-14, 2010, at the Enzian Inn in Leavenworth, Washington. The theme for the upcoming event is *Innovative Approaches for the New Decade*. See additional information about the conference in the article, "Save the Date."

As always, please provide your feedback on this issue of ***Shop Talk***. And, update us on your task lists so we can be on the hunt for materials, equipment or data you need to make your operations more successful and efficient. You are the reason the Consortium has been in operation these past 14 years, and with your help, we'll be here providing support for many years to come. Thanks for all you do!

Preparing Facilities for Extended Vacancies

By Kraig Rosencratz, Maintenance Supervisor, Snohomish School District

Having worked in school facilities for more than 13 years, I can tell you that there isn't a single person who doesn't look forward to the winter school breaks. Students are excited with the anticipation of being out of school, as are the school staff and administration. It can be a joyous time of year with family and friends, and a time to relax without the worry of homework or the need to get up and out the door in bad weather.

> **"When you're prepared for the worst, anything less is easier to deal with."**

There is another societal group also excited about the extended breaks – the criminal element – those who look for unlocked doors or other ways to gain access for mischief. The mischief may be theft or vandalism. Whatever they do in your facility, you can bet that it won't be good and will likely cause you to have to spend holiday time, and a pile of money, cleaning or repairing buildings. But mischief is not the only threat to facilities during extended vacancies.

What are hazards during extended periods of vacancy?

- **Security**: It is well-known that buildings, especially schools, are left unoccupied for lengthy periods of time during holidays. This allows more time for the criminal element to act without being noticed, particularly in unmonitored buildings.

- **Weather**: Last year was a tough one for winter weather, and some of the worst weather arrived when many schools and other facilities were closed for holidays. With extreme cold temperatures comes the potential for pipes to freeze, including fire sprinkler pipes. This can not only cause water damage if they break and thaw, but can prevent them from working when needed for fire control.

- **Power Loss**: Power outages not only affect a building's ability to protect itself against cold (HVAC systems can't operate without power), but can also prevent an alarm system from notifying building managers when an intrusion or other event has occurred. Battery back-ups never seem to last long enough and when they're down, so is your early warning system.

- **Personnel Working Alone**: Even when you have personnel working during holidays, it is usually a very small crew, often only one or two in a building. This puts them at greater risk with regard to injury and puts the building at risk with regard to intruders (if the alarm is off for your personnel, then it is also off for the criminal element).

Kraig Rosencratz

How can you protect your facilities during extended vacancies?

1. **Regular Inspections**: The most effective way to ensure buildings are secure and undamaged is to conduct regular inspections. A building shouldn't be left without a visual check, inside and out, more than two or three days, especially in extreme weather. It is well worth the expense of paying someone to ensure there are no leaking pipes, the doors are locked and the security system is functioning.

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Vacancies

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2. **Use Your Alarm Monitor**: Utilize your alarm monitoring company by having their operators do a quick check of your facility alarm systems to find trouble spots such as alarms without power. This can be a real time saver, allowing you to focus on more critical issues.

3. **Plan Ahead**: Have a plan for who will respond when emergencies happen. Know ahead of time who will be available, so you avoid trying to reach people who are out of town. In addition, compile an emergency phone list and make copies for all offices and classrooms.

4. **Communicate**: Inform your alarm monitoring company about planned activities, or lack of activities, in your facilities during extended vacancies. The more knowledge they have, the better able they are to serve your security and fire watch needs.

5. **Be Aware**: If you have people working alone in buildings, you need to know where they are. Be sure they have adequate communication devices and know who to call for emergencies or to get information. Don't leave them hanging out there without giving them what they need to feel secure.

6. **Prepare Your Tools**: Ensure your maintenance tools and vehicles are fully fueled and ready to go (a power outage can keep you from getting fuel).

When you're prepared for the worst, anything less is easier to deal with. Winter breaks are fun for everyone, but can be a dangerous time for our facilities. Give them the love and care they need so they will be there when we return.

Contact Kraig Rosencratz, 360-563-3562 or e-mail *kraig.rosencrantz@sno.wednet.edu*, with questions or comments.

Kraig Rosencratz began his school district career in 1997 as a custodian at a Mount Vernon elementary school. While working as a custodian, he went back to college and earned his associate's degree in business management, which – along with hard work – enabled him to grow into his current leadership responsibilities as Maintenance and Custodial Supervisor for Snohomish School District.

Save the Date

Energy/Facilities Connections 2010: *Innovative Approaches for the New Decade*

The 2010 Energy/Facilities Connections Conference is scheduled for May 12-14 at the Enzian Inn (*http://enzian inn.com*) in Leavenworth, Washington. Don't miss the fine blend of technical and operational education and training events presented by top-flight experts. You will find that this is an event that will pay for itself many times over!

ENERGY/FACILITIES CONNECTIONS

You can register at the Consortium website, *www.energy.wsu.edu/PlantOperations*: click on the *"Energy/Facilities Connections Conference"* link on the right-hand side of the screen. Contact us (360-956-2058 or e-mail *PlantOps@energy.wsu.edu*) with any questions. Reserve your lodging now at the Enzian Inn by calling 800-223-8511 and using code 8318.

We look forward to seeing you in May!

Ask an Energy Expert: Induction vs. LED Street Lighting

Photo courtesy of OSRAM Opto Semiconductors

When looking at the cost of a lighting system, consider the purchase, installation, and maintenance costs – as well as disposal of spent lamps.

Consortium members have asked about the pros and cons of induction versus LED street lighting. Your Consortium staff leveraged the expertise of Cindy Wills of the Washington State University Extension Energy Program via EnergyExperts.org to provide the following answer. Wills has been with the WSU Extension Energy Program since 1996, answering hotline calls and providing technical responses to inquiries about lighting and the Washington State Energy Code. She also writes technical fact sheets and articles on energy topics.

The Consortium Asks:

A member municipality wants to upgrade its street lighting. What are the advantages/disadvantages of induction versus LED (light emitting diode) lighting systems?

Cindy Wills Answers:

These technologies have some big similarities:

- High initial cost
- Limited (but increasing) fixture selection
- White light
- Instant-on operation
- Work well in cold weather
- Long lamp life

High initial costs are somewhat offset by reduced maintenance costs. Both currently have similar efficiencies, although LEDs are continually improving on that measure.

While high pressure sodium (with its yellowish-pinkish light) continues to be the street lamp of choice in many communities, some cities are opting to retrofit their street lighting with white light. In addition to induction and LED, other lamps that provide white light include metal halide and fluorescent.

One of your first decisions will be whether or not your new system can use the existing pole infrastructure. That will determine fixture type and mounting height. Test installations are strongly recommended, so color and intensity can be viewed in the real world where they will matter.

Both induction and LED products should be seen as luminaire packages (lamp, driver/ballast/starter, fixture), not retrofit components to place into existing fixtures. For this reason the efficacy of the fixture, not just lumens per watt of the light source, is important to proper light distribution. It also might be wise to consider compatibility with your control system.

Induction systems have been in use for many years with proven results. Actual useful life of induction lamps is probably 70,000 hours, making them a good solution in tunnels, on

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Cindy Wills

College

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Departments at all three campuses can communicate with one another by using a call box.

Shawn Fuller, PSI account executive

(DTMF) signaling protocol (just like a telephone keypad).

"We figured that once the college had an excellent radio network and communication system, why not use that for campus alerting?" said Fuller. "We designed a system with off-the-shelf parts, where the college could remotely control outdoor speaker systems and indoor public address systems. They're now able to activate those speakers and send live alerts over two-way radio, either while on that campus, or from another campus."

Moreover, the device interconnects with the campus computer interface to create links with internet databases. In other words, a person can create multiple systems with a click of the mouse. The system was designed to be flexible, expandable, and able to be controlled remotely, making it a good investment for future adjustments and expansion.

"There were a few bumps to sort out, but all in all it worked better than we expected," said Bill Wilkie, director of facilities at Olympic College. "Communication is vital in everyday operations and especially in most emergency situations. This tool allows us to be better prepared and should also make things easier when working with our other campuses."

The system installation was cost-efficient in comparison with others in use around the country, explained Wilkie. Consortium staff has observed the system in use and urges other members to consider it as a model.

For more information about the Olympic College system, contact Bill Wilkie, 360-475-7835, or e-mail *bwilkie@oc.ctc.edu*.

> **"The first goal was to improve coverage within the Bremerton campus – to virtually eliminate 'dead spots' on the campus."**

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Social & Health Services
Transportation
Veteran's Affairs
Washington State Patrol

*Our warm welcome to new members in **bold blue** type. We look forward to serving your facility and operations needs.*

Lighting

Continued from page 5

bridges, and other places where the long life reduces risks and costs of changing out spent lamps. Induction lamps come in wattages up to 150 watts, yielding about 8,900 lumens.

LED systems are newer to the street lighting market. They do not currently have the power to act as high-mast general lighting, but are being installed as high as 35 feet in some demonstration projects. Currently there is a lot of variability in the quality of products on the market. Useful life of LEDs is considered to be between 35,000 and 50,000 hours.

When looking at the cost of a lighting system, consider the purchase, installation, and maintenance costs – as well as disposal costs of spent lamps. Be aware that the presence of mercury in a lamp (LEDs do not contain mercury) may be affected by state laws regarding disposal. Also be aware of the need to comply with recommended lighting levels and applicable codes.

Reprinted with permission from *EnergyExperts.org*. If you have a question for EnergyExperts.org, contact *PlantOps@energy.wsu.edu* or 360-956-2055.

To view other questions answered by energy experts at the WSU Extension Energy Program, search the Energy Solutions Database: *www.energyexperts.org/EnergySolutionsDatabase.aspx*. Other resources include a searchable calendar of events and energy-related employment listings at *www.energyexperts.org/TrainingEducationandEmployment.aspx*.

Consortium Member Hosts International Media During Winter Olympics

By Phil Partington, Consortium Staff

The Vancouver Convention Centre in British Columbia, one of the Consortium's esteemed members, is the location of the International Broadcast Centre and Main Press Centre for the 2010 Olympic and Paralympic Games this winter. Nearly 10,000 journalists and media support staff from around the world will be based there to report on the games and events held throughout metropolitan Vancouver and in Whistler.

"We are absolutely excited about welcoming the world media" said Rand Mackenzie, director of facilities at the Vancouver Convention Centre. "This place will be bustling for a few weeks, with activities quickly ramping up in mid-January."

While gearing up for the Olympics has been exhilarating, Mackenzie and his team also remained focused on their day-to-day activities, along with opening of an expansion of the facilities in April 2009 (tripling the convention space) and a top-to-bottom renovation of the existing facility. For the combined total of nearly 500,000 square feet of meeting, exhibition, ballroom, and theatre space, Mackenzie heads a team of about 20 base facilities staff, plus contractors who look after custodial services, other building services, and renovations.

"It's great to be in the heart of all the excitement," said Mackenzie. "Our priority is to provide the best of services while being as accommodating as possible. …With an event of this magnitude, we have of course been faced with some security restrictions. As expected, security is intensifying as the Games draw near."

Rand Mackenzie, director of facilities at the Vancouver Convention Centre

Always looking ahead, Mackenzie notes that "We begin to take back possession of the Centre in March, at which time our focus will be to prepare in getting the buildings ready for our next clients… we have many events scheduled for post-Olympics."

For more information about the Vancouver Convention Centre and its involvement in the 2010 Winter Olympic and Paralympic Games, contact Rand Mackenzie: 604-647-7338, e-mail *rmackenzie@vancouverconventioncentre.com*, or *www.vancouverconventioncentre.com*.

Kostyantyn Dubetskyy (left) and Greg MacKintosh, power engineers with the Vancouver Convention Centre, survey the status of a 1500 ton York chiller/heat pump that uses seawater from Coal Harbour in heating and cooling.