

RCM NEWS

RCM News for September 2011

A newsletter for Resource Conservation Managers in the Northwest

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Boilers

The following three articles appeared in the June 2011 issue of *Engineered Systems (ES)*; to read the full text, free registration is required:

1. "[A Boiler Plant Upgrade's Tough College Course](#)," by Michael J. Murphy, Lead Project Engineer, MEPC, relates challenges met in accommodating a new mechanical room that had to be linked to the utility connection in a cramped space a building away. An infrastructure upgrade for historic Columbia College Chicago included that task. Ultimate success depended on intelligent problem-solving by an expert design team.
2. "[Precious Metal: Cogeneration and Cooperation at Oregon State](#)" was co-authored by Colin Moar, CIBSE, CSA, and Geoff Wampler, LEED® AP BD+C; both of Heery International. The Oregon State University Energy Center has the first LEED-Platinum university cogeneration plant in the country. This case study describes the design, the commissioning review, and various problems encountered and solved along the way to installation.
3. "[VRF Points to Improved Comfort, LEED® Standard at NC College](#)," by staff, describes the road taken to renovate the oldest building on the campus of historic Guilford College in Greensboro, North Carolina. The renovation included a heating and cooling upgrade that employs multi-split variable refrigerant flow (VRF) technology. The operations and facilities team at Guilford is aiming for LEED-Silver certification.

Buildings

"Project: UW-Madison's Education Building," by staff, is a two-part article:

Part 1 is [Teaching Green: UW-Madison's Renovated Education Building](#). The 1900 Beaux Arts building was both renovated to include an atrium and enlarged by a new wing; it was designed to achieve LEED-Platinum certification.

Part 2 is [Sustainability for Today](#). Heating and cooling is now accomplished using a chilled beam system. Standard in Europe, they are gaining ground in the U.S. The author explains a bit about

the effectiveness of this system. The project also included attention to natural light, skylights, a green roof, native vegetation to capture run-off, and trees and other plants to absorb rainwater.

Data Centers

["Inside the Box: UCLA's New Portable Data Center,"](#) by Dian Schaffhauser, was posted in *Campus Technology* on August 11, 2011. A 40'x8' cargo-container is the new Performance Optimized Datacenter (POD) on the UCLA campus. It was much cheaper than an expansion of UCLA's bricks-and-mortar data center and is highly energy efficient. It is running at 15 to 20 percent capacity allowing for future load increases.

["Power without Pause,"](#) by Carol Brzozowski, is a seven-Web-page article that appeared in the July/August issue of *Distributed Energy*. Syracuse University has a data center powered by natural gas microturbines; the Green Data Center is energy efficient with reduced emissions.

Facilities Management

["Get Ready for the Smart Grid,"](#) by Janelle Penny, Associate Editor, *Buildings*, was published in the June 2011 issue of that journal. This article describes three steps to take in order to ensure that an already existing, smart building is transformed into one that is smart-grid ready.

The following three articles provide information that would be applicable to facilities in various sectors; they were published in the July 2011 issue of *Building Operating Management*:

1. "An FM's Guide to Picking the Right Roof" was authored by Karen Warseck, Contributing Editor, *Building Operating Management*.

Part 1 is [Picking the Right Roofing Product Has Several Considerations](#). The author suggests steps to take *before* soliciting proposals from roofers. They include reviewing applicable ordinances and codes, understanding how aesthetics will and should influence roof design, and considering all relevant building particulars. They also include an evaluation and analysis of the current roof to help determine what will or will not work in a new roof and what parts of the supporting structure will need repair or replacement before a new roof can be installed. The author includes a construction checklist and a contractor checklist.

Part 2 is [Climate Plays Big Role In Selecting the Right Roofing Products](#). The author includes some ideas about how climate may affect roofing choices in ways that may not be obvious; roofing costs are also considered. In addition, the article links to [Roof Savings Calculator](#), which was developed by the Oak Ridge National Lab for the U.S. Department of Energy. Finally, the author has included a climate checklist.

2. "Partners in Efficiency" was written by Susan Bloom.

Part 1 is [For Facility Managers Looking to Save Energy and Money, Four Projects with ESCOs Offer Useful Lessons](#). Energy service companies (ESCOs) can provide more than the initial capital needed to embark on a project to upgrade lighting, heating and cooling, and other building systems. ESCOs can also offer project planning and other kinds of assistance. The author points out how important it is to have good communication between those responsible for the building(s), in this case the city of Tallahassee, and the ESCO, which was Honeywell Building Solutions.

Part 2 is [Building Occupants' Requirements Make Every Energy Project Different](#). The Virginia Department of Corrections has been working with ESCO Johnson Controls on water conservation and solar power generation projects. In another case, the Metropolitan Development and Housing Agency of Nashville has been using ESCO Siemens Industry Inc. on several projects

including lighting upgrades, water conservation efforts, better heating and cooling, and renewables. Part 2 also includes a sidebar by the author, "Steps to Lower Energy Bills."

3. "Showcase: Controls" was written by James Piper, Ph.D., PE, Contributing Editor, *Building Operating Management*.

Part 1 is [Beyond 'Wow': Real Gains from an EMS Upgrade](#). An energy management system (EMS) will need to be checked and recalibrated from time to time for it to continue to save energy and maintenance costs as well as deliver comfort and building reliability. Eventually, any installed EMS will need to be evaluated to determine whether it is time for it to be upgraded or replaced.

Part 2 is [Upgrading or Replacing EMS System - A Big Decision](#). Costs have to be compared and, much more difficult, benefits have to be determined and compared as well. Part 2 offers a number of suggestions to help the facilities manager make the decision.

Part 3 is [Product Showcase](#). Thirteen related products are listed and linked to further information.

HVAC/R (Heating, Ventilation, Air Conditioning, and Refrigeration)

"[HVAC Payback](#)," by Don Talend, is a five-Web-page article published in the July/August issue of *Distributed Energy*. Upgrades described in this article are focused on incorporating variable-frequency drives (VFDs) into the HVAC systems. VFDs give a reliable and quick payback. Case studies of HVAC upgrades at a call center, a university, a hospital, and a high school are included. All show, in detail, the differences in the various upgrades applied. For example, the high school upgrade included the use of alternative fuels.

Plant Operations Support Consortium

The [Fall 2011 issue of Shop Talk](#), a publication of WSU Extension Energy Program Plant Operations Support Consortium, highlights the "passing of the torch" from Bob MacKenzie to Ed Valbert, new Consortium Manager. Other articles provide energy-saving quick tips, and discuss the collaborative effort between the Consortium and state departments of General Administration and Commerce to assist state agencies in reporting their energy consumption on ENERGY STAR Portfolio Manager.

Policy

"[UO Draws the Line on Energy Usage](#)," by Greg Bolt, appeared in the September 12, 2011, issue of *The Register-Guard*. The University of Oregon expects to continue to grow as time goes on, possibly adding one million square feet of new buildings on its campus in the next decade. The one thing that will not grow is its energy consumption; the university has capped its future energy use to no more than it is now. This is a commitment to initial capital investments in energy efficiencies in both new and existing buildings. There is a water component to the policy as well that addresses runoff issues. Millions of dollars in lower energy bills are expected.

Zero Waste and Policy

1. "[The Bullitt Foundation Vision](#)" is an undated piece by Denis Hayes, President, Bullitt Foundation, on the Cascadia Center for Sustainable Design and Construction website. It describes the need to begin designing and constructing buildings that are as ecologically sound as possible. The new Bullitt Foundation headquarters is, actually, a Bullitt-owned, six-story commercial facility in Seattle that will be mostly inhabited by other organizations – Bullitt will occupy just a third of a floor. The goals set for the buildings and the challenges that will have to be met to reach them are discussed. Other information about this project is available in the left frame of the Web page.
2. "[Zero Landfill Is Not Zero Waste](#)," by Eric Lombardi, Executive Director, Eco-Cycle, Inc., shows the importance of distinguishing between the two. It is estimated that 90% of waste can be

recycled or reused – that is, not landfilled. The remaining 10% might be eligible for waste-to-energy efforts. The lion's share of what is often called waste-to-energy now is really just burning. Burning waste is dirty and actually wastes energy. The author strongly cautions against burning waste to avoid *both* landfilling *and* recycling. Waste-to-energy only makes "green" sense when all other re-uses have been exhausted.

3. "[Zero Waste on San Francisco's Horizon](#)," by Dan Sullivan, Managing Editor, *BioCycle*, chronicles the city's advanced effort to maximize waste diversion through municipal policies and practices that have been in place for decades.

Upcoming Events & Training Opportunities

Lighting Design Lab Fall 2011 Education Series

- What's New in Lighting: 2011 (morning class)
- Matching Technologies to Applications (afternoon class)

These two classes, intended for those familiar with basic lighting terminology as well as those entering the lighting industry, are offered on various dates at various locations:

- Oct. 6, 2011 in Everett, WA
- Oct. 12, 2011 in Missoula, MT
- Oct. 19, 2011 in Bellevue, WA
- Oct. 25, 2011 in Seattle, WA

<http://www.lightingdesignlab.com/classform.php>

Building Operator's Certification

- BOC Level I

One day a month of training and project work in building systems maintenance.

- October 13, 2011, ending Mar 29, 2012 in Silverdale, WA

- BOC Level II

One day a month of training and elective coursework in equipment troubleshooting and maintenance.

- Oct 18, 2011, ending Mar 6, 2012 in Renton, WA

<http://www.theboc.info/wa/wa-schedule.html>

Portland General Electric Seminars and Webinars

One-hour webinars led by expert instructors. These provide highlights from PGE's half or all-day seminars.

- Intro to Solar Thermal & Photovoltaic Systems – Oct. 18, 2011
- Intro to Energy Monitoring for Energy Savings – Oct. 27, 2011
- Intro to Energy Systems & Managing Costs – Nov. 1, 2011
- Intro to Compressed Air Systems – Nov. 10, 2011

Half day seminars are offered to customers on a variety of topics, such as Energy Monitoring Workshop for Energy Expert Users, Fundamental of Efficient Lighting & Controls, and Energy & Water Efficiency.

http://portlandgeneral.com/business/news_classes/classes/default.aspx

Future Energy Conference

Session tracks include Energy Efficiency, New Technology Updates, Financing Energy, Energy in Context and Washington State Energy Summit.

- October 18-19, 2011 in Seattle, WA

Northwest Environmental Business Council, Washington State Department of Commerce

<http://www.futureenergyconference.com/cities/seattle/>

Idaho Energy and Green Building Conference

- Oct. 19-21, 2011 in Boise, ID

NEEA, BetterBricks, ID Office of Energy Resources

<http://idahocities.org/index.aspx?nid=229>

Fundamentals of Pumping System Assessments

This awareness webinar gives an overview of the ASME Energy Assessment for Pumping Systems Standard.

- Oct. 20, 2011 webinar

Hydraulic Institute

<https://pumpsevents.webex.com/mw03051/mywebex/default.do?siteurl=pumpsevents>

American Society of Healthcare Engineers (ASHE) – E2C Peer Technical Forums

Online series specific to hospital energy savings. Free and open to ASHE members and their staff.

- Reporting and Relationships for Success: Legacy Health – Oct. 20, 2011
- Case Study of Energy Management: Kadlec Medical Center – Nov. 17, 2011

ASHE, BetterBricks and Energy Star

<http://asheregion10e2c.betterbricks.com/calendar>

AEE (Association of Energy Engineers) Realtime Online Seminars

Live interactive courses you can take from your computer. Programs are generally two to three hours long, over a period of days. Dates following course names below are start dates. Refer to website for more classes.

- Developing an Energy Management Master Plan – Nov. 14, 2011
- Pitfalls & Profits in Performance Contracting – Nov. 14, 2011
- Converting Energy Audits to Business Plans – Nov. 18, 2011
- Boiler & Steam System Cost Control – Nov. 29, 2011
- Interior Lighting: LED vs. Traditional – Dec. 1, 2011
- Justifying Energy Efficiency as a Business Investment – Dec. 9, 2011
- Advanced Lighting Retrofit Options – Dec. 12, 2011
- Energy Auditing Fundamentals – Dec. 12, 2011
- Mechanical Engineering Fundamentals for Non-Mech. Engineers – Dec. 12, 2011

<http://www.aeeprograms.com/realtime/>

Resources for You

Green Wire News

The latest edition of the [Green Wire](#) news is available. This newsletter is brought to you by the Resource Conservation Manager at the Olympia School District, and is chock full of information such as numbers on reduced energy, water and expenses at the Olympia SD, tidbits about CFLs, and food choice impacts.

Visit the website for Olympia SD's RCM Program at

http://osd.wednet.edu/schools/resource_conservation/main.

Washington Green Schools

170 schools (and growing) in Washington State are participating members of [Washington Green Schools](#). The program provides resources and tools to involve students, teachers and community members in assessing and taking action to increase resource conservation and waste reduction in schools. Their website includes a myriad of information and resources such as how your school can participate, and assessment forms and guides for energy efficiency, recycling and waste reduction and water conservation. The program offers teacher trainings, fun facts and newsletters.

The Building Operator's Energy Efficiency Tool Kit

The [BetterBricks Tools and Technical Advice website](#) offers ways to identify opportunities to save 5-30% of energy use by improving your building's operating performance. The website offers a guided tour of the top four common energy-performance problems, performance indicators, symptom-diagnosis tool, best practices for major equipment and other resources.

Conduit

Conduit is a new, web-based resource that facilitates information sharing, coordination and collaboration among energy efficiency professionals in the Northwest. As a Conduit member, you can share resources with your peers, join a group, begin discussions, learn about trainings and other opportunities, and follow groups or people that are of interest. Information can be filtered by sector, function (e.g. training, implementation or evaluation), topic and/or group. Conduit is implemented by Northwest Energy Efficiency Alliance (NEEA) with support from Bonneville Power Administration (BPA).

<https://conduitnw.org/Pages/Welcome.aspx>

Energy Events Calendar

<http://www.energyexperts.org/TrainingEducationandEmployment/EventsCalendar.aspx>

Washington RCM Support

Washington State University Energy Program RCM Support

Check out the "RCMx". We appreciate any feedback on this site and would also appreciate items to add to our resources such as tools, examples of policies, and job descriptions.

<http://www.energy.wsu.edu/PublicFacilitiesSupport/ResourceConservation/RCMx.aspx>

Oregon RCM Support

Oregon Department of Energy RCM Support

<http://oregon.gov/ENERGY/CONS/RCM/rcmhm.shtml>

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Previous issues of RCM News may be viewed at <http://www.energy.wsu.edu/PublicationsandTools.aspx>

(click on Resource Conservation in the right hand column).

We welcome comments or ideas for articles. Please send to Karen Janowitz - janowitzk@energy.wsu.edu

