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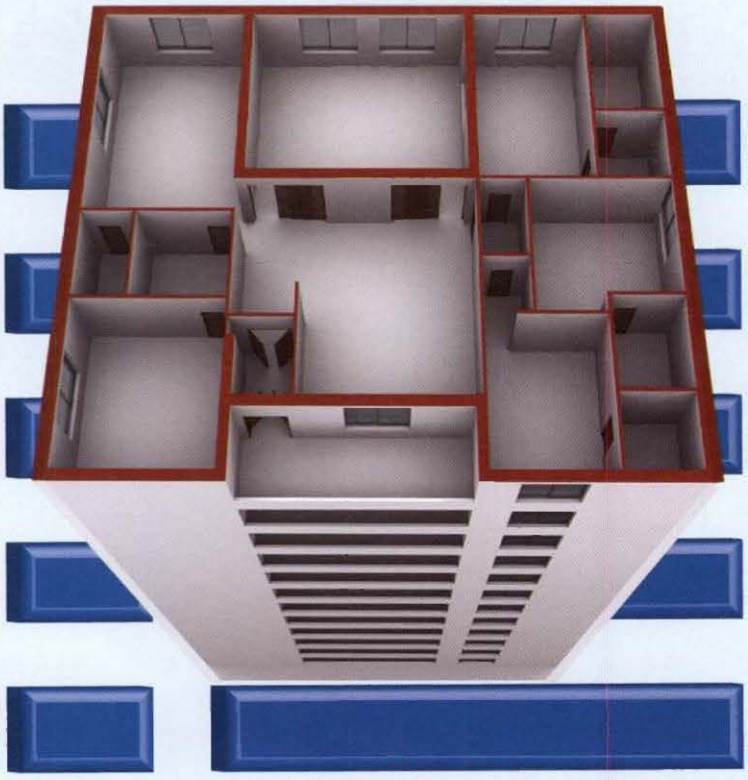

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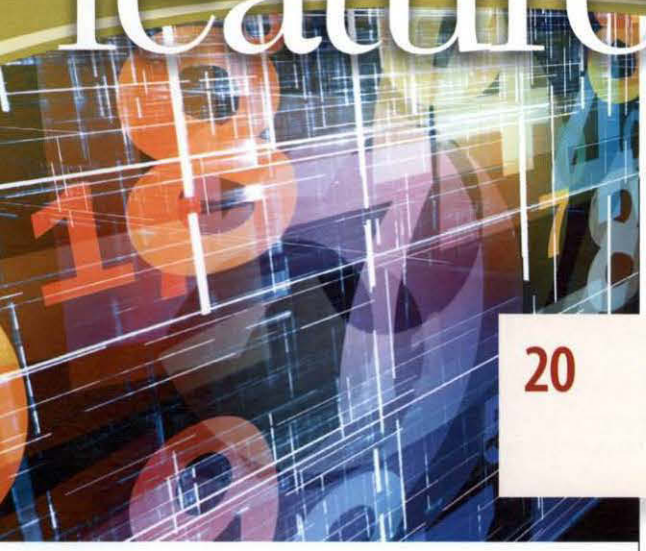
JANUARY/FEBRUARY 2012
VOLUME 28 • Number 1



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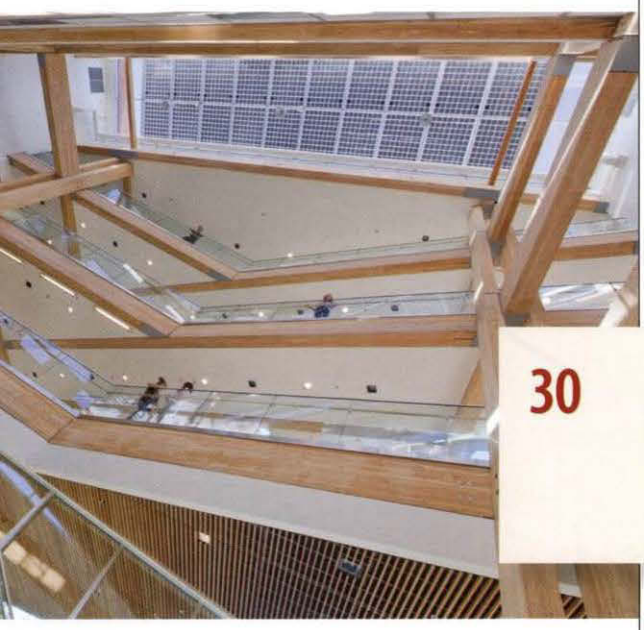

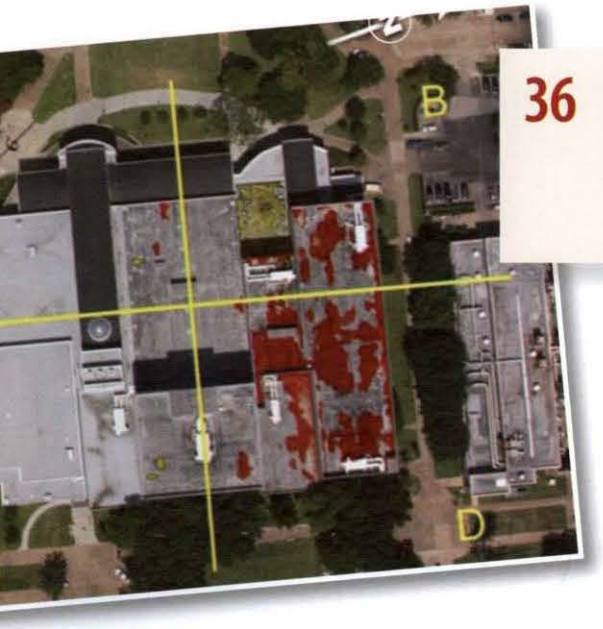

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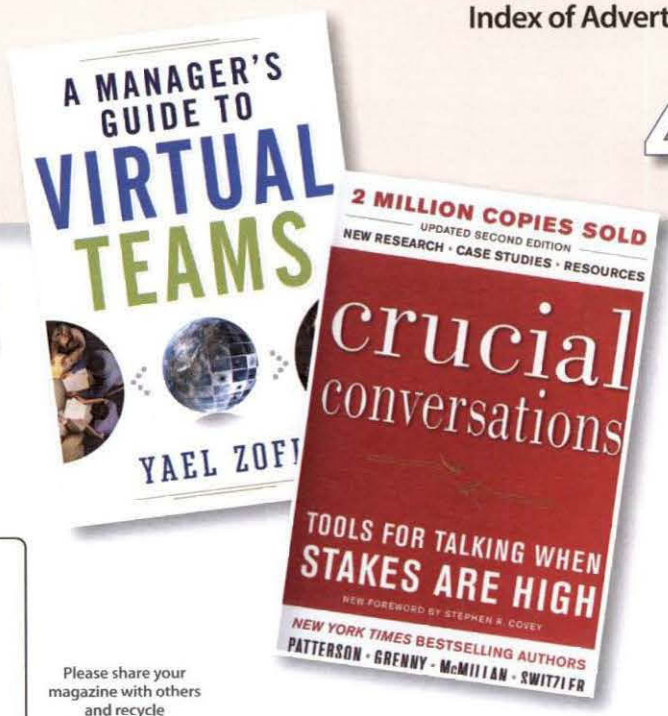

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A THANKS TO OUR TRILOGY AUTHORS

More than 40 facilities professionals volunteered countless hours to write a chapter in one or more of the new books in the APPA trilogy, *Operational Guidelines in Educational Facilities*. Their contributions and dedication to the asset management profession truly go above and beyond the typical call to service. Kudos to the following authors:

Editor-in-Chief:

Alan Bigger, APPA Fellow and past APPA President

Custodial:

Casey Wick, Custodial Task Force Chair, American International School/Dhaka
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- The State of Sustainability
- Getting to "Yes"
- State Tax Appropriations for Capital Needs

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About APPA

APPA promotes leadership in educational facilities for professionals seeking to build their careers, transform their institutions, and elevate the value and recognition of facilities in education. APPA provides members the opportunity to explore trends, issues, and best practices in educational facilities through research, publications, professional development, and credentialing. Formerly the Association of Physical Plant Administrators, APPA is the association of choice for 5,200 educational facilities professionals at more than 1,500 learning institutions throughout the United States, Canada, and abroad. For more information, visit us at *www.appa.org*.

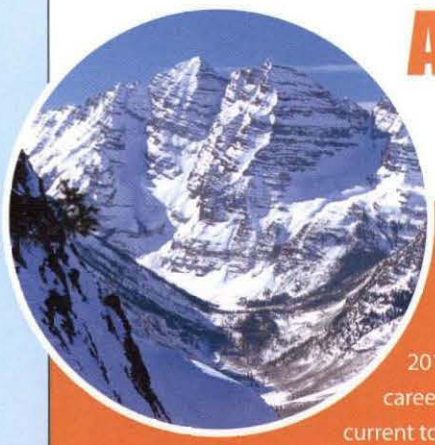
Industry News & Events

facilities digest

By Anita Dosik

2012 AWARD NOMINATIONS DUE JANUARY 31!

Applications are now being taken for APPA's 2012 institutional and individual awards: Award for Excellence, the Sustainability Award, Effective and Innovative Practices Award, APPA Fellow, Meritorious Service Award, and Pacesetter Award. The deadline for consideration for these awards is January 31, 2012. Awards nominations and applications submitted after January 31, 2012 will be held and considered in the 2013 award cycle. Visit *http://www.appa.org/recognition/* for award details and to submit award applications.



APPA 2012: Annual Conference and Exhibition

SAVE THE DATE FOR APPA 2012

July 17-19, 2012 * Denver, Colorado

Registration is now open. If you didn't make it to APPA 2011, you missed the profession's major go-to event for career enrichment and advancement, a chance to discuss current topics with other thought leaders in educational facilities community, and much more. Plan now to attend APPA 2012 to be held July 17-19, 2012 in Denver, Colorado. Work APPA 2012 into your professional development and travel budgets. For more information and to register, visit *http://www.appa.org.*

Above: Outgoing Credentialing Board Members: *(From left to right)* Lander Medlin, APPA Executive Vice President; Christina Hills, APPA Director of Credentialing & Benchmarking; David Cain, Coconino Community College; Jack Colby, Chair, North Carolina State University. *(Back Row)* Jim Roberts, Campbell University; Phil Cox, Vice-Chair, APPA Member Emeritus; Jim Whittaker, Facility Engineering Associates.

APPA'S CREDENTIALING BOARD WELCOMES NEW MEMBERS

On December 9, 2011, the original APPA Credentialing Board welcomed three new members: J. Thomas Becker, Dave Button, and Yvette Halverson. They will replace three original members (Erin Babson, Phil Cox, and Jim Roberts) who have served for the full three 2-year terms allowed.

The board was established in 2007, and is solely dedicated to APPA's credentialing efforts: the Educational Facilities Professional credential (EFP) and the Certified Educational Facilities Professional (CEFP) program. Both programs seek to establish a standard for professional practice in the field of education facilities management.

Left: Incoming Credentialing Board Members: *(From left to right)* Jack Colby, North Carolina State University; Yvette Halverson, University of North Dakota; Christina Hills, APPA Director of Credentialing & Benchmarking. *(Back Row)* Jim Whittaker, Facility Engineering Associates; David Cain, Coconino Community College; Thomas Becker, Philadelphia University; Dave Button, University of Regina.

EVENTS

Jan 22-26 APPA U Institute & Leadership Academy, *Hilton Head, SC*
Apr 16-17 7th Annual Smart & Sustainable Campuses Conference, *College Park, MD*
Apr 18 APPA Drive-in Workshop, *Cleveland, OH*
Jul 17-19 APPA 2012 Annual Conference, *Denver, CO*
Sep 23-27 APPA U Institute & Leadership Academy, *Vancouver, BC Canada*

OTHER EVENTS

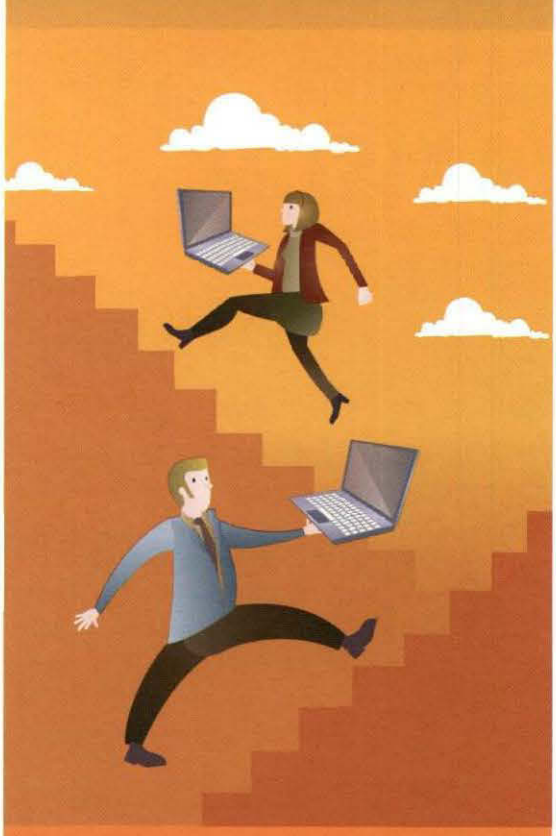
Feb 6-9 IDEA's 25th Annual Campus Energy Conference, *Arlington, VA*
Feb 22-25 CAPPA Technology and Leadership Conference, *San Antonio, TX*
Feb 27-Mar 1 Supervisor's Toolkit, *Las Cruces, NM*
Mar 7-8 NCAPPA Conference 2012, *Charlotte, NC*
May 3-4 MD/DC/NJAPPA Joint Educational Program, *Ocean City, MD*
Jul 17-19 PCAPPA Conference 2012, *Denver, CO*
Sep 16-19 RMA Conference 2012, *Sheridan, WY*
Sep 30-Oct 2 ERAPPA Conference 2012, *Philadelphia, PA*
Oct 13-16 SRAPPA Conference 2012, *Lexington, VA*
Oct 13-17 MAPPA Conference 2012, *Minneapolis, MN*
Oct 14-17 CAPPA Conference 2012, *Dallas-Fort Worth, TX*

For more information or to submit your organization's event, visit *www.appa.org/applications/calendar/events.cfm.*

ADVERTISE YOUR POSITION OPENINGS IN JOB EXPRESS

If you are looking for a highly qualified pool of candidates for a facilities management opening, Job Express can help you. Your ad will be posted online where it can be seen by thousands of facilities professionals who access APPA's website. The Job Express audience consists of professional facilities managers in top executive level positions, individuals who are retiring from the military with extensive facilities and engineering experience, graduates of APPA's Institute for Facilities Management, and members who have earned the EFP certificate.

Job Express gives you market exposure through its online postings. All ads appear in one format for one low cost and are hosted online for eight weeks! Add e-mail and website links so that applicants can reach you at the click of a button. To find out more, go to *http://www.appa.org/jobexpress.*



TAKE YOUR CAREER A STEP FURTHER WITH CEFP CERTIFICATION

Beyond the EFP Credential level, the Certified Educational Facilities Professional (CEFP) designation denotes the highest level of educational facilities mastery, elevating the credibility of the individual who holds the certification and the institution their certified professional represents. Learn more by visiting *http://certification.appa.org/cefp_home.cfm* or by contacting Christina Hills at *christina@appa.org.*

APPA PUBLISHES EXPANDED AND UPDATED OPERATIONAL GUIDELINES TRILOGY

APPA has updated its popular *Operational Guidelines* trilogy of publications on Custodial, Grounds, and Maintenance. The new books incorporate leading-edge topics related to technology, service innovations, benchmarking, outsourcing, sustainability, and much more. Order the books at *www.appa.org/bookstore.*

facilities digest

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Contact APPA's staff for any questions regarding membership, programs, or publications via phone or e-mail.

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Directs book, periodical, and research development, including the BOK (Body of Knowledge). Editor of *Facilities Manager* and *Inside APPA*. Staff liaison to the SRAPPA region, Information and Research Committee, the Center for Facilities Research (CFaR), and the BOK Editorial Board.

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Directs APPA's professional development programming initiatives through the Supervisor's Toolkit, Institute for Facilities Management, Leadership Academy, and Annual Meeting. Coordinates corporate development opportunities through the APPA's tradeshow and sponsorship initiatives. Staff liaison to the MAPPA region and the Professional Development Committee.

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Manages APPA's credentialing and certification effort, including the Educational Facilities Professional (EFP) and Certified Educational Facilities Professional (CEFP). Primary responsibility for the annual Facilities Performance Indicators (FPI) survey and report. Staff liaison to the CAPPA region, Credentialing Board, the Professional Affairs Committee, and the Awards and Recognition Committee.

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Supports general administrative functions. Coordinates the Facilities Management Evaluation Program (FMEP). Works with the APPA Board of Directors and Executive Committee.

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Manages logistics for APPA conferences/events and serves as liaison with business partners seeking to exhibit at APPA's annual conference. Supports professional development marketing activities, as well as membership and product sales initiatives.

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Manages membership recruitment and retention, new member inquires, invoicing, and other customer service questions. Maintains accuracy of APPA's member records database; provides outreach support for regional and chapter events and projects.

APPA RESOURCE REFERENCE guide

CAREER DEVELOPMENT:

APPA Annual Conference: Designed to provide continuing education for facilities professionals across their career. A three-day conference featuring educational programs, networking opportunities, and access to exhibits.
Contact: Suzanne Healy, *suzanne@appa.org*, 703-542-3833
http://www.appa.org/training/APPA2011/index.cfm

Supervisor's Toolkit: Increases the productivity and effectiveness of front-line supervisors.
Contact: Suzanne Healy, *suzanne@appa.org*, 703-542-3833
http://www.appa.org/training/toolkit/campus.cfm

Institute for Facilities Management: A week-long four-track program that provides comprehensive education in the fundamental skills needed to successfully manage a facilities operation.
Contact: Suzanne Healy, *suzanne@appa.org*, 703-542-3833
http://www.appa.org/training/institute/index.cfm

Leadership Academy: A four-track learning opportunity emphasizing different perspectives and types of leadership skills.
Contact: Suzanne Healy, *suzanne@appa.org*, 703-542-3833
http://www.appa.org/training/academy/index.cfm

Senior Facility Officers Summit: Specifically designed for educational facilities professionals who have full institutional responsibility for facilities management, operations, and construction.
Contact: Suzanne Healy, *suzanne@appa.org*, 703-542-3833
http://www.appa.org/training/sfo/index.cfm

CREDENTIALING:

EFP: This program confirms your achievements and illustrates your basic, fundamental understanding of what it takes to create and maintain a safe, functional, and inspiring working environment.
Contact: Christina Hills, *christina@appa.org*, 703-542-3844
http://credentialing.appa.org/

CEFP: This program is for the more experienced facilities professional and demonstrates mastery and professional competence of the knowledge and skills needed by senior educational facilities professionals.
Contact: Christina Hills, *christina@appa.org*, 703-542-3844
http://credentialing.appa.org/

BENCHMARKING AND RESEARCH:

FMEP: Program provides institutions with an in-depth, peer-directed evaluation of their campus and facilities operations.
Contact: Holly Judd, *holly@appa.org*, 703-542-3834
http://www.appa.org/FMEP/index.cfm

FPI: An annual collection and reporting of data related to educational facilities that provides data for an integrated research information database.
Contact: Christina Hills, *christina@appa.org*, 703-542-3844
http://www.appa.org/research/fpi/webinar.cfm

Center for Facilities Research (CFaR): Provides educational facilities professionals and other administrators and students with support and encouragement for independent research that will lead to improved education management practices.
Contact: Steve Glazner, *steve@appa.org*, 703-542-3836
http://www.appa.org/Research/CFaR/index.cfm

OTHER RESOURCES:

Facilities Manager: Bimonthly magazine, FM offers solutions for management and technical problems, timely feature articles, association news, book reviews, and more.
Contact: Steve Glazner, *steve@appa.org*, 703-542-3836
http://www.appa.org/FacilitiesManager/index.cfm

Body of Knowledge (BOK): Provides your entire facilities organization with online access to practical guidance, best practices and proven solutions from the educational facilities profession's most respected and recognized leaders. The foundational content for APPA Institute and Credentialing programs.
Contact: Steve Glazner, *steve@appa.org*, 703-542-3836
http://www.appa.org/BOK/index.cfm

Thought Leaders Series: Promotes dedicated discussions on the future of higher education and the impact of that future on educational facilities.
Contact: Steve Glazner, *steve@appa.org*, 703-542-3836
http://www.appa.org/tools/measures/tls.cfm

FACILITIES CAREER CENTER:

This is a unique Web-based service for educational facilities professionals and employers. List facilities management position openings at colleges and universities, museums, K-12 schools, and other institutions. *Job Express* is updated weekly to ensure that only the most current information on available positions is posted. *Resume Bank* is a searchable database of resumes posted by interested job candidates. A *Job Descriptions* database and *Student Internship* information area is also included in the Facilities Career Center.
Contact: Steve Glazner, *steve@appa.org*, 703-542-3836
http://www.appa.org/careercenter.cfm

CHOICES – What Matters the Most?

By E. Lander Medlin

New Year's resolutions or not, getting more organized, setting priorities, and focusing the time you have on what matters most, are worth the effort. What better time than now – the beginning of this new year – to do so. The benefits are numerous: increased productivity, reduced stress, and improved relationships, to name a few.

I had the opportunity to renew my thinking on this very topic a few weeks before the holidays, while engaged in a program called "5 Choices." I found the experience and information both enlightening and rejuvenating. Even if it's just common sense, my guess is that it's not common practice. That's where the challenge comes in, and why the timing seems right as we begin this new year.

CONSISTENCY IN FOCUS

Certainly one of the keys is consistency. When we consistently focus our energy and attention on high-quality/high-value decisions, we can achieve so much more, both professionally and personally. The trick is finding the right balance. It starts with putting our "minds" in the right place so that we can indeed focus our time, energy, and attention more consistently. So, daily, are you just sorting out the "chaos" – moving from one urgent reaction to another? Or, are you acting on what is really important in a proactive manner?

It has been said that so many of us spend our waking hours getting things done without ever stopping to ask: "Are these the right things to be doing?" Indeed, we are products of the new information society/age, which has added increasing levels of complexity and distraction to an already overloaded work life. However, as human beings we have the ability to discern – use our insight and understanding – to make better choices.

MAKING CHOICES

Ultimately, it's all about the choices we make anyway. Do we have to be doing something important to be busy? Unfortunately, NO – being busy does not necessarily mean productivity. Charles Hummel called it the "Tyranny of Urgency," where the focus is on crises, emergency meetings, last-minute deadlines, etc, which many times are viewed as a necessity. Yet, taken to the extreme, we can easily burn out. The work of the facilities professional can certainly breed this type of urgency addiction.

We need to be strategic about our choices to achieve a greater return on our time and energy. Instead of being a product of our circumstances, we can be a product of our choices. Choosing to refocus these activities into ones that are more proactive and planned, creative and goal-oriented helps manage our time on the most important things. The challenge is great, yet the benefits are arguably and measurably greater over time.

For example, if you have 10 to 15 wildly important goals, then in reality you probably don't have any important goals. A simple technique for making such choices is that in the moment of choice ask, "Is it important?" Then pause, clarify, and finally decide for yourself – is it really important? The simple act of asking the question and pausing to consider its real importance can make a big difference in your ability to say NO to those less than important things

in life. By doing this, more often than not you will find that your focus is on people and relationships rather than things and events. It is a natural outcome – and a very positive one – if you pause to do this each time you're faced with a choice.

A clear and compelling purpose provides the breeding ground for setting our priorities helping us discern the things that are worthy of our time and attention. It changes the game mentally (our thoughts) which is the beginning point for action. This way, we get the right things done and our success rate goes up appreciably. "How you spend your time is how you spend your life. How you protect your time is how you protect your life." Use your calendar accordingly. Block out time for planning, organizing, and putting the people that are most important in your life on your calendar first. This builds-in defenses for these things, ensures follow-through and consistency, and gives balance and perspective to achieve the first things in life, which will pay-out exponential dividends over time.

TECHNOLOGY: TOOL OR TYRANT

Certainly technology can be a tool or a tyrant! It can rule your life if you let it. What you want is to find the right technology tools to ensure alignment, thus using technology to support your needs, not the other way around. Treat technology like you would any other important choice, by pausing, clarifying, and then deciding what is most important in fulfilling your needs. Leonardo da Vinci said, "Simplicity is the ultimate sophistication." Consider your use of technology with the same end in mind.

One suggestion I have found useful in managing everything that comes into my technological in-box is the OHIO rule – "Only Handle It Once!" Are you handling the information coming in only once? If not, use this time to consider how you could do so. "When you turn important action items from an e-mail into a specific task or appointment, your odds for accomplishing those things go up dramatically."

THE FOUR "Rs"

One final point: you must continually fuel your own fire making sure that you are renewed, restored, refreshed, and replenished every day. Create patterns of consistent renewal in such areas as how often you move, what you eat, and how much sleep you get. Make time to relax, and for those you need to connect with daily, so you keep your fire burning, instead of burning out. Know what matters most, and then create a set of boundaries so that every day, you will do what matters most to you. If you do, you will not only achieve your goals, but also feel fulfilled, inspired, and inspire those around you.

Here's to a great year!

Lander Medlin is APPA's executive vice president; she can be reached at *lander@appa.org*.

Calling All Emerging Facilities Professionals

By Kristie Kowall

As an individual recently labeled an "Emerging Facilities Professional," I was asked to share what my membership to APPA/MAPPA means to me, and also what it could mean for each of you.

I am lucky enough to be living the "perfect" facilities career. I began as a student worker at Illinois State University with the Facilities Department, and then stayed on full-time after my graduation (which was a little longer than most as I was on the five-year plan!). Back then, I was content to complete my daily work and create new ideas/processes, but would not have considered myself to be a career-motivated individual.

After about eight years in my department, I was given an opportunity to attend my first MAPPA Conference in 2005. At the time, I was a training assistant for the facilities department. I appreciated the chance to learn about all the different aspects of facilities, networking with others in the same field, and getting to spend quality time with my director. Little did I know that this would be a career changing event in my (and my department's) life. My hard work, dedication, and positive attitude were noticed, and I was given opportunities to begin branching out in the department and in supervising others.

The author, right, receives the APPA Pacesetter Award from EVP Lander Medlin.

From that October date in 2005 until now, I have been on a fast-track to become a better leader by getting more involved at work and in APPA/MAPPA. I have been promoted multiple times to my current position as director of administrative services at facilities, and have served on many committees within our university. I have also been given many amazing opportunities within the APPA/MAPPA organization, such as:

- Professional Development Committee member
- APPA Institute graduate
- MAPPA Membership Chair
- Selected to participate in the brainstorming meetings for the current APPA Strategic Plan
- APPA Pacesetter Award recipient
- APPA Leadership Academy attendee (two tracks left until graduation)
- co-chair of the Emerging Facilities Professionals Exchange
- co-presenter for the emerging facilities professional findings at the APPA Board meeting in July 2011
- voted MAPPA President-Elect in October 2011

I did not accomplish all of this on my own. I am where I am today because of my director's value in professional development; the autonomy and trust from my leadership; the support from my staff and family; and the mentorship I received from my department and APPA/MAPPA.

Those who know me well know that I share my story not to brag, but to let all of the emerging professionals know that the door is open. Wide open actually! If you have a desire to get involved, there are many avenues for you to pursue. APPA leadership seeks the new ideas and perspectives that we have to offer and are excited to have that "splash" of new people involved in the organization.

The future of APPA is in our hands, but we have to step up and get involved. Step up. Volunteer to serve on committees and/or to serve in elected positions. As we enter a time when the baby boomers will be exiting the workforce, we need to jump in and learn from them before they leave. Find a mentor, ask questions, and value all the

time and effort these individuals have given over the years. This is how we will continue to grow together as an organization.

I spoke of the many opportunities that APPA has to offer, but I also wanted to highlight some of the benefits that may be more attractive to the emerging professionals:

- **Job Express** gives you access to see postings in the field and also the ability to post your resume.
- **Networking** through conferences, training, drive-ins, discussion lists, Facebook, etc., all provide access to so many professionals in the field. The transfer of knowledge is unlimited, and you meet many people that may think of you when future opportunities arise.
- **Professional Development** is so important. Many of us did not come directly from a degree related to facilities, and APPA offers the **APPA Institute** where you can learn about the four core areas of facilities, the **Supervisor's Toolkit** and the **APPA Leadership Academy** to gain both basic and advanced leadership skills. Through these sessions, I have made lasting friendships. These are the people you can count on and call when you have a question about anything.
- The **Emerging Facilities Professional** (individuals, regardless of age, that are progressing in their career, seeking involvement, with fresh, new ideas to share) is a priority to APPA. In support of the new APPA Strategic Plan, a cohort of emerging facilities professionals was formed to discuss what membership means to us and what we would like to see modified/added to APPA to make membership more meaningful. And this is just the beginning.

I also share my story for those of you who are often referred to as "seasoned" facilities professionals as well. Please continue to support and guide us so that we can learn and lead in the best ways possible. Know that you are our role models, and we look up to you. Now is the time, if you haven't already, to find someone to mentor so that the facilities profession and the APPA organization will continue to grow and flourish. Remember that as we spend time together, you will likely grow and learn something from us as well. We often hear of those individuals who are just counting down the days to retirement.

We also hear of those who are focused on leaving a legacy. I challenge each of you to take advantage of this opportunity and make mentoring a priority in your legacy as well. Take the time to pass on your knowledge and expertise so that the department will grow even more in the future.

I leave you with a quote by Henry Ford that I keep on my desk, "Whether you think you can or whether you think you can't, you're right." APPA in its entirety (the organization and the people) is here to promote your growth, knowledge, and success. If you want more, now is the time. Reach out and you will be inspired by all of the amazingly supportive people, and the amount of work that is accomplished by this organization.

As APPA prepares to enter its centennial celebration next year, I am excited to see what the future holds for this great organization of remarkable individuals. I've been told that you get much more out of the organization than you put in. I know this to be true from my experience so far. Be encouraged and inspired for your future in facilities, and continue to encourage and inspire others as well.

To all of my APPA/MAPPA friends, I thank you for the incredible journey I've enjoyed so far. To those I have not yet met, I truly hope that our paths will cross someday.

Kristie Kowall is director of administrative services at Illinois State University, Normal, IL, and can be reached at *klander@ilstu.edu*. This is her first article for *Facilities Manager*.

2011 REGIONAL CONFERENCE REPORTS

For more information visit *www.appa.org/regions/index.cfm*

CAPPA Central Region

Bob Eckels
CAPPA President
Missouri State University

Over 350 participants of the Central region attended the CAPPA 2011 Annual Meeting from September 25-28 in Springfield, Missouri. There was representation from 49 colleges and universities. Held at the University Plaza Hotel, it made for a convenient location adjacent to the host school, Missouri State University. We did our best to offer a big Ozarks Welcome to our CAPPA guests and business partners, as well as our APPA guests, who included John Bernhards, APPA Associate Vice President; Darrel Meyer, APPA Immediate Past President; and Christina Hills, APPA Staff Liaison.

Bob Eckels

The theme of the conference, "Changing to Meet the Need," seemed quite appropriate, as limited resources dictate that we all find more efficient ways to meet the facilities mission for our respective institutions. Four educational tracks were offered in the categories of maintenance and utilities, grounds and custodial, design and construction, and human resources. Additionally, the educational program included Project Management, Supervisor's Toolkit, and a GE Lighting Institute seminar.

The Exhibit Hall comprised 81 Business Partner booths that were a buzz of activity. The partnership with higher education facilities folks and those who provide the products and services to help us meet our mission was quite clear.

Leadership talks came from author Steve Eiffert who posed the question: "Are You a Better Leader than a Pirate Captain?" and MSU Football Coach Terry Allen, who challenged us to appreciate the importance of teamwork. Entertainment included golf at the Payne Stewart Golf Course, a voyage on a showboat, Sunday Night Football at the St. Louis Cardinal's Double-A Baseball Park, and a night of music, dining, and improvisational comedy at a local historic theatre. Spouses discovered the City of Springfield's chocolate factory, the botanical gardens, lunch at an original firehouse, and survived a voyage on the Titanic in Branson.

The awards banquet included some great music, along with the university's own fine wine, and some fun socializing with colleagues and friends. Certificates of Meritorious Service were awarded to Vickie Younger, Lalo Gomez, and Steve McClain; Distinguished Member Awards were presented to Mike Johnson and John Greene; the President's Awards went to Matt Kadavy and Sue-Anna Miller, and the Newsletter Award to Terry Major.

CAPPA 2011 attendees.

THE 2011-2012 CAPPA OFFICERS

President – **Bob Eckels,** Missouri State University
1ST VICE PRESIDENT – **Shelton Riley,** Texas Christian University
2ND VICE PRESIDENT – **David Handwork,** Arkansas State University
3rd Vice President – **Doug Riat,** University of Kansas
Immediate Past President –**Ted Weidner,** University of Nebraska – Lincoln
Junior Representative – **Larry Zitzow,** University of North Dakota
Senior Representative – **J.B. Messer,** Oklahoma City Community College
Information Services – **Roy Ruiz,** University of Texas – Austin
Treasurer – **Tim Stiger,** University of Science & Arts of Oklahoma
Secretary – **Kathy Reynoldson,** Nebraska Wesleyan University
Professional Development Co-chair – **Sue-Anna Miller,** University of Oklahoma
Co-Chair – **Vickie Younger,** Missouri State University
Newsletter Editor – **Vickie Younger,** Missouri State University
Membership – **Thomas Lee,** Southeast Missouri State University
Historian – **Art Jones,** Black Hills State University
APPA Liaison – **Christina Hills**

ERAPPA Eastern Region

Bob Cornero
ERAPPA Vice President
for Technology & Communications
Monmouth University

Above: Outgoing president, Terry Pellerin welcomes incoming president, Greg Scott.
Below: Performance by "Squid Precision Drummers".

More than 475 attended with 89 institutions represented at the 2010 ERAPPA Annual Meeting, which took place October 2 - 5 in Halifax, Nova Scotia. The theme for the conference, "Sailing to Success," was future-focused and designed to help educational facilities professionals navigate the choppy waters to personal and corporate victory. Monday's keynote speaker, CFL Hall of Famer Terry Evanshen, spoke about never giving up and never taking anything for granted and related his experiences recovering from a near-fatal auto accident. On Tuesday, Derek Hatfield spoke about building the team that helped him to circumnavigate the globe – solo.

The conference was hosted by the Atlantic Chapter of APPA (AAPPA) under the leadership of Christine Matheson and Gary Schmeisser. The host committee provided an exceptional five-track educational program, numerous networking opportunities, and wonderful local entertainment that took advantage of the best offerings of the host city, including an old-fashioned East Coast Cèilidh Kitchen Party at the historic Pier 21 National Museum of Immigration. The conference finished with a "Hollywood Style" Awards Banquet, complete with red carpet, paparazzi, Elvis, Marilyn, drums and fire, where outgoing President Terry Pellerin (Worcester Polytechnic Institute) bestowed honor and recognition upon worthy ERAPPA scholarship recipients, APPA award recipients, and special, heartfelt thanks to individuals who helped make his presidency a success. ERAPPA Certificates of Appreciation and Merit were awarded to Committee Members, Host Committee Chairs and Members, and Past Chapter Presidents.

Greg Scott took over as president at the end of the annual meeting and looks forward to aligning the region with APPA's strategic plan, increasing institutional membership, and continuing the great service and value that ERAPPA provides to the members.

THE 2011-2012 ERAPPA OFFICERS

President **Greg Scott,** Pennsylvania State University
President-elect **Dan Gearan,** University of Souther Maine
Vice President of Chapter Affairs **Dale Deblois,** Colby College
Vice President of Membership **Greg Clayton,** University of Prince Edward Island
Vice President of Annual Meetings **Beth Clark,** Pennsylvania State University
Vice President of Technology and Communication **Bob Cornero,** Monmouth University
Secretary **Kevin Mann,** Salisbury University
Treasurer **Art Walsh,** University of New Brunswick Fredericton
Past President **Terry Pellerin,** Worcester Polytechnic Institute
APPA Liaison **John Bernhards**

MAPPA Midwest Region

Left: MAPPA ToolKit Group after graduation. Congratulations!

Brandon Baswell, MAPPA President.

Amy Carnahan
MAPPA Newsletter Editor
Michigan State University

The 2011 MAPPA Educational Conference and Annual Meeting were held October 8-12, 2011 at the Kingsgate Marriott in Cincinnati, Ohio. The conference was co-hosted by Cincinnati State University and University of Cincinnati.

The 326 participants represented colleges, universities, and businesses throughout the Midwest. Of the 326 participants, MAPPA was excited to welcome 58 First Time Attendees. Twenty-four participants took part in the Supervisor's Toolkit training while Phyllis Gillis (Illinois State University) and Amy Carnahan (Michigan State University) were certified to teach the program. The conference ended with seven participants taking the EFP exam on Wednesday morning. This year's program coincided with the Big Ten and Friends Building Service Administrators' Conference.

The educational breakout sessions included relevant topics on a variety of subjects empowering attendees with knowledge that will be beneficial to them in their daily assignments. Campus tours and evening activities created a time to get to know other MAPPA participants.

The President's Banquet was held at the Midwest Culinary Institute. Outgoing President Ruthann Manlet (University of Minnesota) passed on the presidency with a packet of cigars and a lesson in cake baking to Brandon Baswell of Michigan State University.

Before Ruthann's term was over, she expressed her gratitude to others who went above and beyond in supporting her during her term in office by recognizing Russell Bray (Wheaton College), Fred Plant (Valparaiso University), Rebecca Hines (retired from The Ohio State University) and Ron Mapston (University of Minnesota) with the President's Award. Manlet also recognized outgoing APPA Board members Jeri King (University of Iowa), Information and Research, and Kristie Kowall (Illinois State University), Membership.

THE 2011-2012 MAPPA OFFICERS

President – **Brandon Baswell**, Michigan State University
President-Elect – **Kristie Kowall**, Illinois State University
Past President – **Ruthann Manlet**, University of Minnesota
Secretary – **Kris Ackerbauer**, University of Wisconsin, Madison
Treasurer – **Art Chonko**, Denison College
Information and Research – **Mike Hamilton**, Iowa State University
Professional Development – **Doug Greenwood**, University of Minnesota, Duluth
Professional Affairs – **Jerry Carlson**, Butler University
Senior Regional Representative – **John Ott**, The Ohio State University at Wooster
Junior Regional Representative – **Chuck Scott**, Illinois State University
Membership - **James Harrod**, University of Wisconsin
Newsletter Editor – **Amy Carnahan**, Michigan State University
Awards and Recognition – **John Ott**, The Ohio State University at Wooster
Historian – **Rebecca Hines**, retired from The Ohio State University
APPA Liaison – **Suzanne Healy**

PCAPPA Pacific Coast Region

Robyn Pierce
PCAPPA Senior Representative
Portland State University

Above: 2011 Regional President Kathleen Schedler passing the gavel to 2012 PCAPPA President Tony Guerrero. **Below**: The 2012 PCAPPA Board: President Tony Guerrero, Tony Ichsan, Kathleen Schedler, Brian Worley, Robyn Pierce, Ric Williams, Bob Andrews, Dan Park, David Woodson, Kunal Chitre.

California State University, East Bay and the California State University System joined in partnership to host PCAPPA's 60th annual conference in sunny San Francisco. The conference theme was "Synergy by the Bay, A Collaboration Conference." The collaborative partnership between the hosts set the theme for a synergistic approach to educational sessions, information sharing, and networking—arming attendees with additional tools and inspiration.

The partnership set an attendance record with emphasis on learning how green technologies are transforming campuses with special sessions in Grounds, Custodial, and Energy. Our Business Partners contributed through attendance and participation. The educational sessions included tracks on Renewable Energy, Emerging Technologies, Campus Planning & Development, Design & Construction, Sustainable Systems, and Facilities Administration.

Master of Ceremonies, APPA Executive Vice President Lander Medlin, engaged participants as she energized and inspired attendees. The conference opened with a thought-provoking presentation by California PUC Commissioner Timothy Alan Simon. Eric Wahl's keynote, "The Art of Vision," inspired us all to bring more creativity to our workplace and to create a unique experience for our customers. Pam Cox-Otto's presentation, "The New Multi-Generational Workspace," had the audience talking about the changes in the education environment with Baby Boomers, Xs, Ys.

Shawna Rowley, Weber State, led participants through the APPA Supervisor's Toolkit. Scheduled in parallel with the conference, attendees participated in keynote sessions, meals, and networking. Conference hosts Robert Andrews, Ric Williams, and their team of volunteers showed commitment and great leadership in their tireless efforts.

APPA President David Gray recognized: Rick Storlie, University of Nevada, Las Vegas with the Pacesetter Award; San Diego Community College District for Lean Enterprise Processes in Facilities Management, and University of California Irvine for Smart Labs program received the Effective & Innovative Practices Award, sponsored by Sodexo and included a $4,000 institutional award. San Joaquin Chemicals received special recognition for many years of contributions to PCAPPA and the region.

THE 2011-2012 PCAPPA OFFICERS

President, **Tony Guerrero**, University of Washington, Bothell, Cascadia CC
President–Elect, **Robert Andrews**, California State University, East Bay
Secretary and Treasurer, **Brian Worley**, Claremont McKenna College
Vice President and Awards Chair, **David Woodson**, University of British Columbia
APPA Junior Representative, **Kathleen Schedler**, University of Alaska
Membership Chair, **Dan Park**, Whitman College
Information and Research Chair, **Richard Storlie**, University of Nevada, Las Vegas
Professional Affairs Chair, **Tony Ichsan**, Sonoma County and Santa Rosa Junior Colleges
Professional Development Chair, **Ric Williams**, California State University, East Bay
Small Institutional Representative, **Towny Angell**, Reed College
Communications Chair, **Kunal Chitre**, Digital Energy, Inc.
APPA Senior Representative, **Robyn Pierce**, Portland State University
APPA Liaison, **Chong-Hie Choi**

RMA Rocky Mountain Region

Viron Lynch
RMA President-Elect
Weber State University

Luis Rocha, Chris Kopach, and Damian Cox with RCMP cadets.

RMA's Annual Conference was held in Regina, Saskatchewan, Canada, from September 11th to the 14th. Over 240 RMA and WCUPPA (Western Canadian University Physical Plant Administrators) members joined together for a terrific conference. The host committee from the University of Regina did a fantastic job hosting a conference focused on "Harvesting Opportunities."

The conference participants were engaged in educational, recreational, and social activities. Holding true to the RMA tradition, a golf tournament kicked off the conference; the team headed by Dave Button (University of Regina) won the informal international "RMA Cup." For the non-golfers, there was a Fish-n-Fry at Last Mountain Lake and day-trip to Moose Jaw. All of the networking activities were a huge success and enjoyed by all.

Keynote speakers started each day with a moving message. On Tuesday, Andrew Brash shared his story of climbing Mount Everest, detailing the events of the trip ultimately to be stopped 200 meters short of the summit to help save the life of another climber. Then on Wednesday, Darci Lang motivated everyone with her message to focus on the 90 percent that is positive in your life.

Education continues to be an emphasis of the RMA conference. Presenters discussed relevant topics and needs for today's facilities professionals in 20 breakout sessions. Many presentations joined educational facilities professionals with business partners, enhancing the opportunity to form partnerships and increase collaboration.

RMA continues to promote member involvement by building on our unique mentoring program, known as the 14ers. This year, the 14ers welcomed a considerable change by adding RMA Business Partner members as climbers. Several new climbers were welcomed into the group as they achieved their 14 peaks in the preceding year; they were awarded their 14ers pins at the banquet. John Morris (University of Colorado, Boulder) was once again nominated as the lead climber; John's contributions to the 14ers are extraordinary.

At the closing banquet, President Dave Button recognized Lander Medlin (APPA), Polly Pinney (Arizona State University), and Nancy Hurt (Colorado State University) with the RMA President's Award for their service and enormous contributions to RMA and APPA. Joe Metzger (Arizona State University) received the Val Peterson Award for his efforts enhance and contribute to the RMA Newsletter, and Jim Knutson (Trane) was awarded the Lee Newman Award for Business Partners.

RMA was honored to have APPA's President, David Gray (Middle Tennessee State University), presiding over the installation of the new RMA Officers for 2011-2012.

THE 2011-2012 RMA OFFICERS:

President: **Viron Lynch**, Weber State University
President-Elect: **Chris Kopach**, University of Arizona
Treasurer: **Erik van de Boogaard**, Adams State College
Secretary: **Glen Haubold**, New Mexico State University
Communications Coordinator: **Joseph Metzger**, Arizona State University
APPA Senior Representative: **John Morris**, University of Colorado at Boulder
APPA Junior Representative: **Dave Button**, University of Regina
Awards and Recognition Committee Chair: **Luis Rocha**, University of Arizona
Membership Committee Chair: **Kyle Williams**, Brigham Young University-Idaho
Information and Research Committee Chair: **Lindsay Eva Wagner**, Northern Arizona University
Professional Affairs Committee Chair: **Jeff Butler**, Montana State University – Bozeman
Professional Development Committee Chair: **Joseph Han**, Idaho State University
Annual Meeting Coordinator: **Shawna Rowley**, Weber State University
Historian: **Eakle Barfield**, Montana State University – Billings
Business Partner Representative: **Cloriza Lomeli**, GLHN Architects and Engineers Inc.
2012 Host Committee Chair: **Mike Sawyer**, Casper College
2013 Host Committee Chair: **Shari Philpott**, University of Colorado at Boulder
APPA Liaison: **Lander Medlin**

SRAPPA Southeastern Region

Vanessa Wallace-Joseph
SRAPPA Conference Consultant
JosephOne

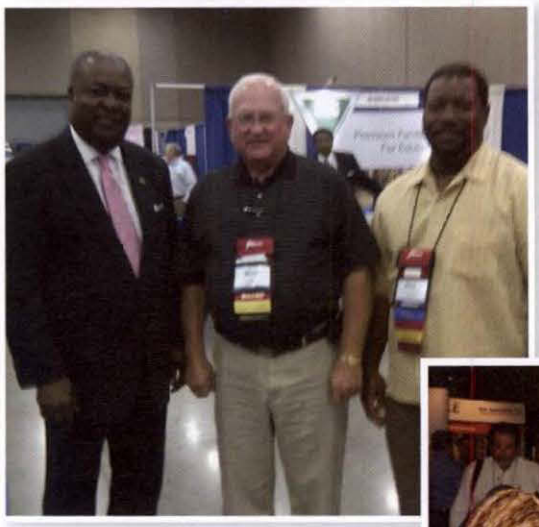
When the time came to plan the SRAPPA annual conference in a tough economic climate, Wayne Goodwin, SRAPPA President-Elect, knew exactly what to do. He charged his team with one simple mission—to plan an informative and engaging conference with a focus on energy awareness all while providing a "taste" of Mississippi's best culture and cuisine. With that, the team went to work, and on October 16-18, 2011, their mission was accomplished!

The 60th Annual SRAPPA Conference, hosted by Jackson State University, was held in in Jackson, Mississippi with its theme "Energy Lights the Way" and more than 175 participants from over 100 colleges, universities, and businesses.

The conference got off to a great start on Saturday with golf at Dancing Rabbit Golf Club in Philadelphia, MS while companions and other attendees enjoyed a historical tour of the city. The day ended with a Jazz Reception in the historic Old Capitol Inn.

On Sunday, it was down to business as the Business Partner Expo began. Mayor Harvey Johnson thanked participants for selecting Jackson as the host city. Over 58 business partners shared their products, services, and industry knowledge.

The education sessions also kicked off on Sunday with three tracks: Sustainability, the Power of Our People, and Effective Facilities Management. Speakers from across the region were invited to provide practical, hands-on knowledge and empower members to transform the institutions they serve. With a productive first day behind them, attendees thoroughly enjoyed the "Catfish & Blues Revue" that evening. Local bluegrass and blues artists showcased Mississippi's rich musical heritage.



Above: Mayor Harvey Johnson, Dan Young, and Wayne Goodwin.

On Monday, a general session on Climate Change was led by Entergy More breakout sessions followed before attendees returned to the Business Partner Expo. The day ended with Monday Night Football in the Walter Payton complex on campus. Attendees were treated to a live performance by the university's marching band, the Sonic Boom of the South.

Tuesday morning's General Session included a presentation of compelling national and regional facilities data and trends. The session was followed by the final breakout sessions.

During the President's Gala later that evening, outgoing president Dan Young bestowed several leadership awards and congratulated the Jackson State Team for a job well done. Incoming President, Paul Wuebold spoke of the strategic mission and exciting things to come in the year ahead. The night ended with more entertainment and fond farewells.

THE 2011-2012 SRAPPA OFFICERS:

President, **Paul Wuebold**, University of Alabama
President-Elect, **Wayne Goodwin**, Jackson State University
Immediate Past President, **F. Daniel Young**, Guilford College
Secretary/Treasurer, **Rebecca Griffith**, Embry-Riddle Aeronautical University
First Vice President, **James Williams**, Virginia Military Institute
Second Vice President, **Jodie Sweat**, Kennesaw State University
Vice President for Communications, **Heather Hargrave**, Tulane University
Vice President for Long-Range Planning, **Nancy Webb**, University of South Florida Polytechnic
Vice President at Large, **Daniel Wooten**, Tennessee State University
Senior APPA Representative, **Larry Blake**, Northern Kentucky University
Junior APPA Representative, **John Malmrose**, Medical University of South Carolina
Business Partner Liaison, **Lee Richey**, Creative Facilities Solutions
APPA Staff Liaison, **Steve Glazner**

Siemens Strengthens Texas A&M's Tradition of Energy Management

Of the many trends impacting U.S. colleges and universities in the next 10 years, two are converging at a rapid pace. The steady decline in the number of high-school age students, from 21.5 million in 2009 to less than 20 million by 2020, is dove-tailing with the rapidly increasing value 18 and 19 year-olds place on global responsibility. To attract smart, young students, institutions are finding they need to be seen as leaders in energy conservation and other areas of sustainability. Texas A&M University is one institution that has taken this bull by the horns.

As one of the nation's oldest and largest universities, Texas A&M is recognized as a leader in all facets of higher education, from academics to athletics to scientific research. The university has also been a leader in campus energy management, dating back to 1893 when it first began generating a significant portion of its own electricity. Texas A&M continues to look forward, with a new $15 million performance contract and the help of Siemens Industry, to upgrade the efficiency of over 20 campus buildings.

Decreasing Costs While Increasing Enrollment

Texas A&M's proactive approach to managing energy consumption on campus targets two important goals. It wants to further control energy costs and provide a greener, more energy efficient campus for a more environmentally-conscious student body. This effort, spearheaded by the university's Department of Utilities and Energy Management (UEM) team — led by Jim Riley, Director of Utilities and Energy Management, and Les Williams, Associate Director of Utilities and Energy Management — has been a proven success. Since 2002, Texas A&M has been able to reduce energy consumption by 25% despite the fact the campus' total square footage grew by 18%.

Staying Ahead of the Curve

Today, the campus is embarking on an ambitious upgrade of 24 campus facilities to further improve energy management. To do this, it is leveraging a $15 million performance contract made possible through ARRA stimulus funds secured by the Texas State Energy Conservation Office (SECO). The contract allows Texas A&M to fund facility improvements through a low-interest loan paid for by future energy savings.

To implement the performance contract, Texas A&M partnered with the Building Technologies Division of Siemens Industry, Inc. a global leader in building automation and energy efficiency solutions. Siemens was selected in part because of their past successes with Texas A&M energy management initiatives. Additionally, the university felt confident in the ability of Siemens to complete all project work by the end of 2011, a key condition of the funding, according to Riley.

Creating a Better More Efficient Campus

In defining key elements of the building upgrades, Siemens and Texas A&M identified solutions that both reduce energy consumption and create buildings that better meet the needs of its students, according to Williams. The final list of projects calls for improvements to 24 campus buildings. These improvements include:

BAS Building Optimization —
Optimization of the campus' building automation system (BAS) will improve energy efficiency and enable better HVAC control in buildings representing over 1.6 million square feet.

Occupancy Sensors —
Occupancy sensors will be installed in offices, classrooms and common areas to reduce energy consumption and eliminate the wasteful practice of conditioning and lighting spaces when not occupied.

Lighting Retrofits —
Replacing older inefficient lamps will reduce energy consumption dramatically. Texas A&M's 700,000 square foot library will benefit greatly from this upgrade as will campus parking garages, which must remain lit 24/7/365.

Top: Rudder Tower is one of 24 Texas A&M buildings undergoing energy efficiency upgrades.

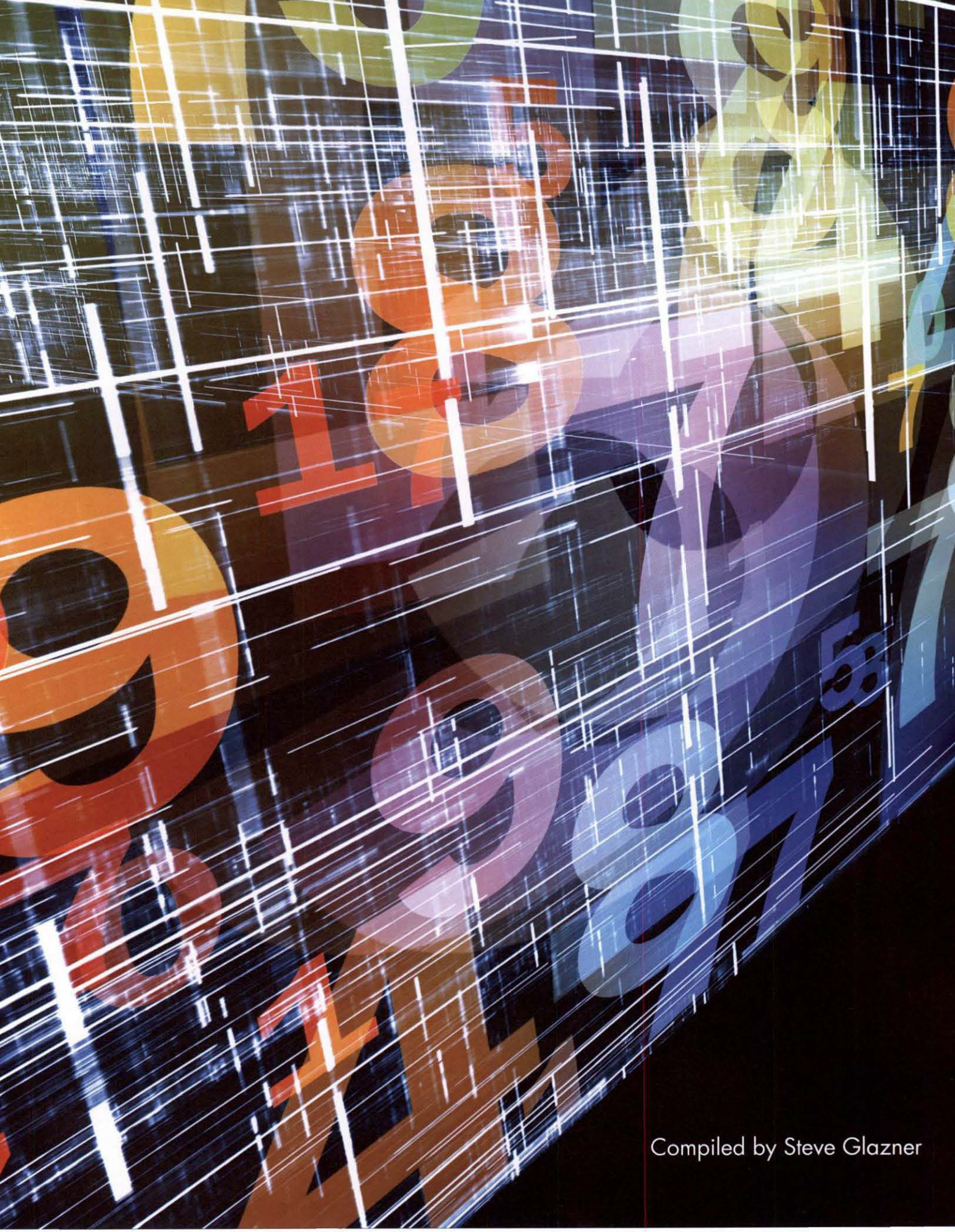
Bottom, from the left: Jeff Murray, Siemens; Jim Riley, Director Utilities & Energy Management, Texas A&M; Jacob Richardson, Siemens; Les Williams, Associate Director Utilities & Energy Management, Texas A&M

The Impact of Performance Contracting

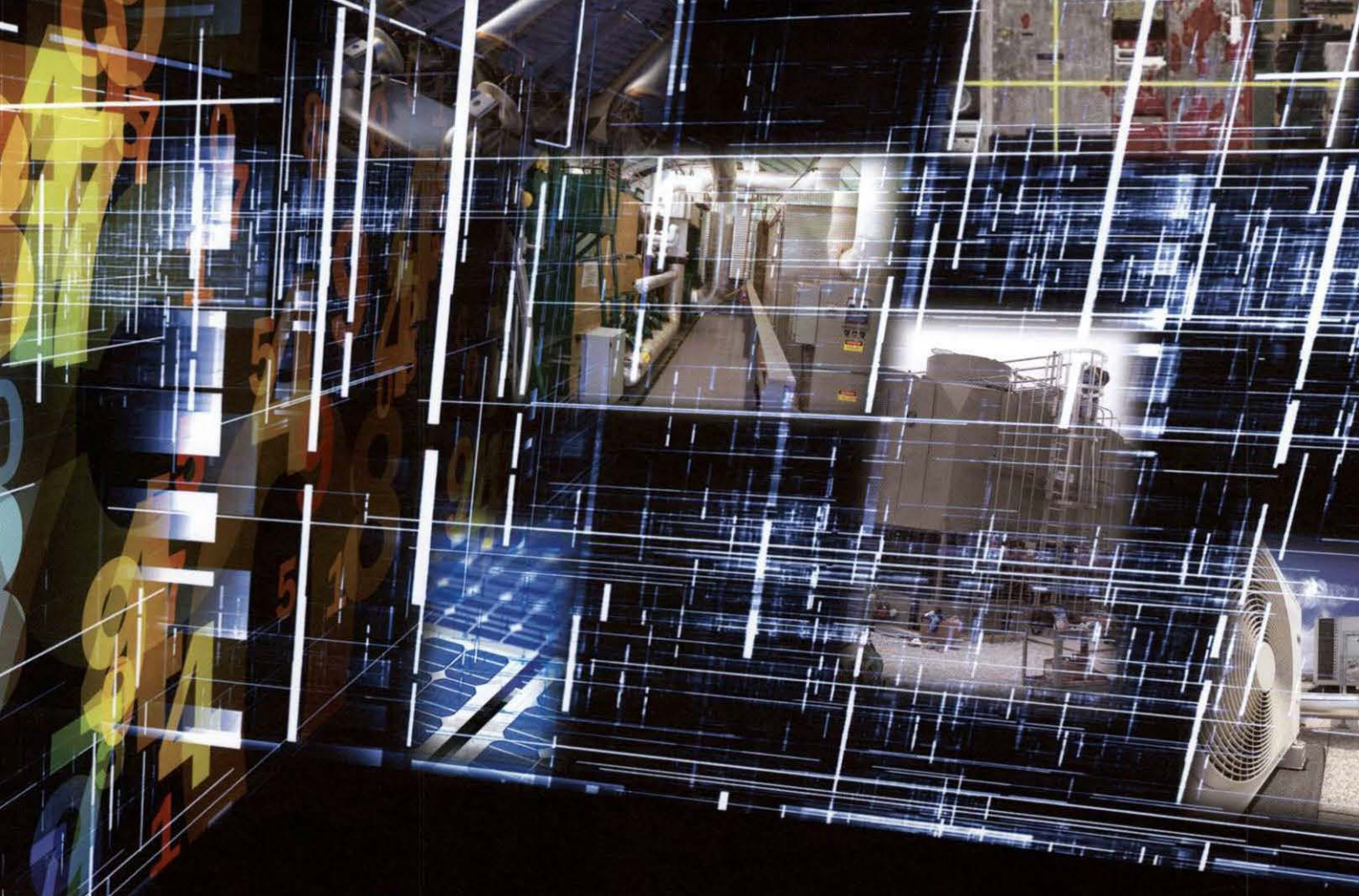
Once the project is completed in 2011, these building improvements are estimated to generate $1.1 million in annual operations and utility savings. The university and Siemens are working closely with an independent third party assessor, selected by SECO, to ensure performance and savings goals are met. The end result is a more efficient, sustainable campus benefitting the students, budget and the environment.

usa.siemens.com/tamu

SIEMENS



Compiled by Steve Glazner



Technology In Use

Technology touches our lives virtually every second of the day. Our work world is especially rich with changing technologies, new innovations, and continually revised processes for greater effectiveness and efficiency. You could easily say that a boiler is a boiler, or a carpet is a carpet, but the reality is that all components of all the systems we use in educational facilities are constantly being modified, improved, and upgraded—hopefully for the better.

***Facilities Manager* generally avoids referring to specific companies, products, or services. We want the reader to focus on the procedures, decision points, or best practices that our authors share with you. However, in this issue on technology, we are naming names and sharing valuable case studies on a few products and companies that have done interesting work with colleges, universities, and schools. We hope you enjoy this issue.**

1

A key issue for our operation was providing accountability. We have instituted SchoolDude to be our work order system. We run inventory, daily maintenance, and preventive maintenance through this program. It has helped to make our operation accountable and run like a business and not with smoke and mirrors. This work is done at our shop levels with our entire department participating to make it work. The program is user friendly and manageable by staff.

Keith C. Macdonald
Director, Physical Plant
Bridgewater State University
Bridgewater, MA
kcmacdonald@bridgew.edu

2

A recent technology improvement we have used here are iPads for staff members who aren't directly tied to an office, such as our custodial staff. Space is a premium commodity as well, so deploying computer access in common areas or mechanical type spaces wasn't realistic. Instead, each custodial supervisor is assigned an individual iPad (we used the first generation) and utilizes the campus wireless network for connectivity. This technology expansion contributes to better communication and more effective working relationships. Each supervisor and their employees are connected through this portable, wireless connection to other building groups, management, main offices, and customers. Training programs can be loaded on each iPad. Leave requests and time submittals are working well through the iPad platform. Campus news and information is readily available to all staff now through the Web interface, creating a more inclusive working environment. Training on the new technology was successful; learning to use an iPad was much less intimidating than learning how to operate a traditional computer work station. This use of iPad technology has been a successful, cost effective, and sustainable solution for SDSU's Custodial Services.

Lynne Finn
Assistant Director, Facilities and Services
South Dakota State University
Brookings, SD
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3

We have continued our "green journey" in 2011 by implementing Activeion (ionized tap water) for all of our daily scheduled cleaning tasks as well as most of our project cleaning. By "cleaning" with water we have eliminated all but three cleaning products, and one of them is white distilled vinegar. We are also using Techno Vap dry steam vapor cleaning for all restroom tile/grout and floor work in tandem with the Activeion. We are using revolutionary and beyond cutting-edge technology to save valuable resources and to deliver "clean" cleaning to our students, staff, and faculty.

Michael B. Smith, OCT, CCT, JTC, WRT, SMCT
CMI Trainer, IICRC Certified, Cleaning Educator
Western Washington University
Bellingham, WA
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4

Upon arriving at Georgia Tech, I found the renovation and lifecycle planning to be inadequate for 3 million square feet of residence halls across 40+ buildings. After months of due diligence and best practice research, we identified simple yet sophisticated computer models from VFA and Whitestone Research. Whitestone asked us to experience a no-cost 'beta-test' of their planned new product, CostLab. This Web-based program enabled us to accumulate accurate planning data. We are now assembling a compelling business case for the redeployment of funds toward large-scale renewal and replacement projects.

Ron Fader
Associate Director of Budget and Finance
Georgia Tech, Department of Housing
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5

At OCCC, we utilize digital photography to record most everything we do. Photos are included in our daily project reports, repairs being completed, and general dissemination of information. Each member of the management team has a Nikon Coolpix S4000 that they carry with them for this purpose. When providing updates to our campus administration, the attached digital images enhance our ability to garner support.

J.B. Messer
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Oklahoma City Community College
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6

Managing utilities for a large university campus has its challenges. In January 2010 we decided to automate the monthly meter reading data collection by choosing the Motorola MC-9590 series handheld device. Not only did we reduce reading times down to one day in most cases, but more importantly we increased the accuracy of our data tremendously. The data is now automatically pushed into our facility management system for monthly billing.

Steve Self
Heating Distribution System Supervisor
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stemself@nmsu.edu

7

We developed an automated key request application. Hard copy signature cards are digitized and requesters can see who their approvers are. Approvers see requests via e-mail and can accept or reject them. Customers can also see where their requests are in the system at any time. Approved requests electronically come into our CMMS and are routed to the lock shop for processing. We've eliminated paperwork, cut two days off processing time, and increased Web request use from 34 percent to 61 percent.

Frank Lucas
Assistant Director, Work Management
University of Nevada, Las Vegas
Las Vegas, NV
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8

Several years ago I started taking digital photos of code violations during annual fire inspections. Photos are e-mailed to users and supervisors of spaces involved. After making corrections I e-mail photos of corrections to the fire inspector, eliminating time-consuming return trips by the inspector. We put copies of our online MSDS data on thumb drives in each building's first aid cabinet for emergency use during power and network failures. In addition, I use my iPhone to e-mail pictures of repairs needed.

Eric Shawn
Facilities Director
Catlin Gabel School
Portland, OR
shawne@catlin.edu

9

Food-waste composting has been a perennial problem that has only grown over time with the focus on sustainability initiatives. I found a new solution in the eCorect Food Decomposer. The food waste is reduced in volume by around 95 percent and turned into a soil amendment. I have installed three of them in our dining halls. I selected this type of decomposer over other equipment because of its simplicity. You just put the food waste—even paper napkins—in and turn it on. Nothing else to add, like other equipment. When I originally looked into the eCorect model, they were being imported from Korea. Now that the company has created a manufacturing facility in Gardena, California, the price has dropped dramatically.

To me this is the silver bullet. Transportation of messy food waste goes away as do all the issues attendant to composting—smells, location, critters, manure source, etc. The only byproducts are distilled water and minimal odor. Check this link for information: *www.foodrecycle.org/03Product/12Model_ET-100w.php.*

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10

NMSU has been able to enhance the building automation and utility monitoring systems by leaps and bounds with the advent of open protocol communication standards such as Lonworks and BACnet. Efforts have been ongoing to migrate away from a legacy front-end application to the Tridium Niagara AX package. This decision has empowered the university with the ability to integrate HVAC, lighting, and utility monitoring systems with a single application. NMSU was on an upward trend of utility consumption prior to this implementation and has since observed reductions for the last five years.

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Reducing Building HVAC Costs of SITE REC

BY STEPHEN J. PARGETER

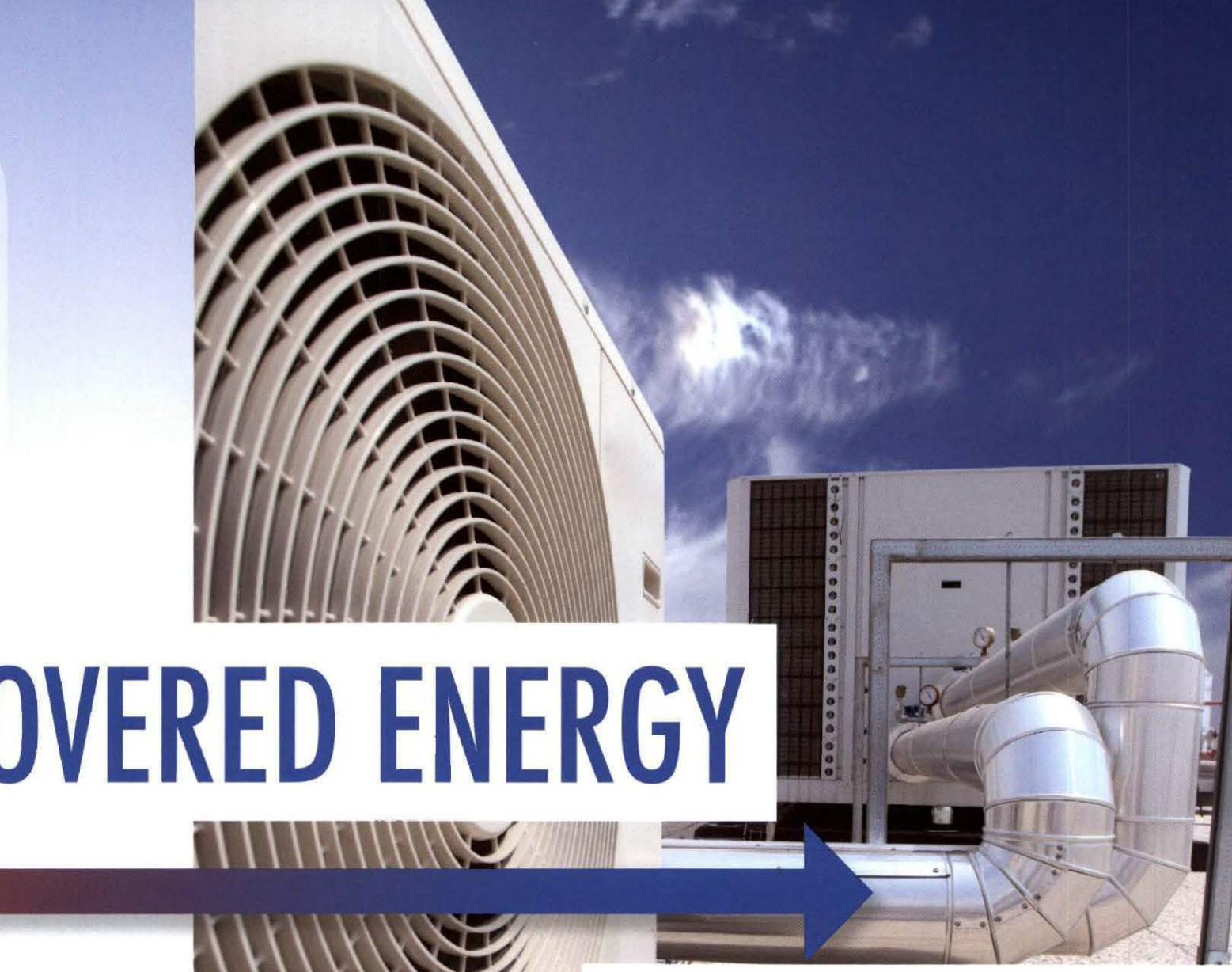
Building owners are caught between two powerful forces—the need to lower energy costs and the need to meet or exceed outdoor air ventilation regulations for occupant health and comfort.

Large amounts of energy are wasted each day from commercial, institutional, and government building sites as heating, ventilation, and air conditioning (HVAC) systems replace indoor air with fresh outdoor air multiple times per day. Heating or cooling energy is continually wasted in the exhaust air stream, while new energy must be generated and used to condition entering outdoor air. Building owners who fail to capture this wasted energy will continue to incur high energy costs, negatively impacting asset values, profitability, and the ability to attract tenants, customers, or students with corporate or federally directed energy-efficiency mandates.

To address this challenge, many building owners are turning to site-recovered energy[1] technologies such as Energy Recovery Ventilation (ERV). Designed to operate with new or existing HVAC units, ERV technology provides an affordable means to simultaneously cut HVAC energy costs without compromising outdoor air ventilation requirements.

IMPORTANT ENERGY EFFICIENCY AND HVAC ENERGY TRENDS

The commercial building energy sector represents 20 percent of all U.S. energy costs and is growing more rapidly than the residential energy sector. With HVAC systems consuming an average of 40 to 60 percent of commercial building energy, owners are searching for ways to reduce these expenses.[2]



OVERED ENERGY

As for government buildings, various local, state, and federal policies encourage, and in many cases mandate, "greener" construction and renovation. For example, the Energy Independence & Security Act of 2007 (EISA 2007) established energy management goals and requirements for federal buildings. Section 431 adopts the energy intensity reduction goals of Executive Order 13423, which calls for energy consumption to be reduced by 30 percent by fiscal year 2015 (relative to a 2003 baseline). Section 434 requires every federal agency to ensure that major replacements of installed equipment (such as HVAC systems) or renovations or expansions of existing space employ the most energy-efficient equipment that is life-cycle cost effective. And, with certain exceptions, Section 435 (effective Dec.19, 2010) prohibits federal agencies from leasing buildings that have not earned an ENERGY STAR label.

As the United States' largest energy user, the federal government is leading by example, through the Federal Energy Management Program (FEMP). This program promotes energy efficiency through recommendations and incentives for the

private sector as well as through guidelines and mandates for federal agencies. The FEMP mandates ERV systems for federal buildings and recommends these systems be considered for schools and businesses.

To help federal agencies comply with all pertinent mandates, the 2010 Facilities Standards for the Public Buildings Service (known collectively as the P100) establish design standards and criteria for the construction, repair, alteration, and modernization of federal buildings. Administered by the U.S. General Services Administration (GSA), these standards state that heat recovery equipment must operate at a minimum of 70 percent efficiency at winter and summer outdoor design conditions.

Many private organizations are also aggressively working to increase building efficiency. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) — the organization that established the benchmark national energy standard 90.1 — recently raised energy efficiency levels in its 2010 standard by 30 percent[3] and proposed the first "green building" standard in 2009.[4] When formally adopted by building codes, these increased efficiency standards will significantly impact HVAC equipment selection and design.

HVAC CHALLENGES

Building owners seeking to maximize the profitability of their investments face several HVAC-related challenges and opportunities including: minimizing wasted energy, replacing existing HVAC equipment and cost effectively meeting or exceeding outdoor air ventilation requirements.

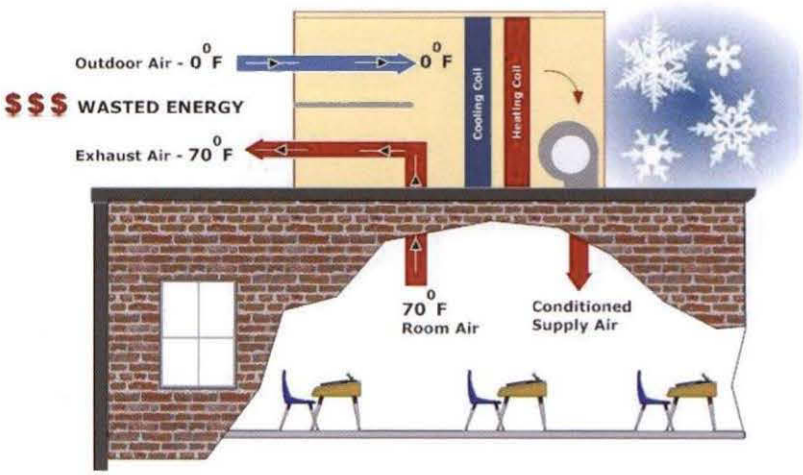


Figure 1: Exhaust air is the largest source of wasted energy in commercial buildings.

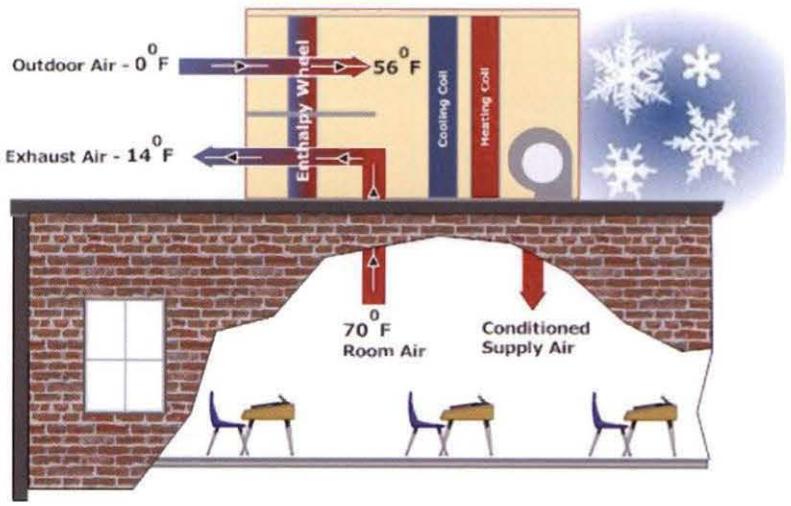


Figure 2: Energy recovery wheel recycles 80% of exhaust energy to precondition outdoor air

MINIMIZING WASTED ENERGY

A large portion of HVAC energy can be attributed to conditioning outdoor air ventilation. As fresh air is drawn into the building, stale air is expelled along with site-generated energy used to condition it. This energy-rich exhaust air represents the largest source of wasted energy in most commercial buildings. By failing to recapture this site energy, owners will continue to face rising energy costs, lower profitability, and missed opportunities to reduce greenhouse gas emissions.

EXISTING HVAC EQUIPMENT

Upgrading HVAC equipment provides an opportunity to lower building energy use, however many energy efficient technologies are perceived to be expensive. Fortunately, proven technologies are available to improve HVAC system efficiency and provide attractive returns. Building owners willing to apply these technologies can successfully reduce energy consumption and greenhouse gas emissions in existing buildings, often with local utility support.

OUTDOOR AIR VENTILATION VS. ENERGY COST

Studies have proven that outdoor air ventilation creates a healthier work environment. According to the EPA, "Indoor air can be 2-5 times more polluted than outdoor air…[and] that increased amounts of outdoor air supply is generally better for Indoor Air Quality."[5]

However, as outdoor air rates increase, so does the size, cost, and operating expense of HVAC systems. Attempts to reduce these costs by lowering ventilation rates in the 1980s led to Sick Building Syndrome and multiple indoor air quality complaints and law suits, resulting in building codes to protect the health and comfort of occupants. Recognizing that more ventilation is beneficial, building owners must find a solution

to provide for the health of its building occupants while also controlling energy costs.

THE SOLUTION: ENERGY RECOVERY WHEEL TECHNOLOGY

Energy recovery wheels, also known as enthalpy wheels, resolve the conflict between indoor air quality and energy conservation by recovering site energy contained in building exhaust air. Up to 80 percent of this energy is recycled to precondition outdoor air, resulting in reduced HVAC load and operating cost.

For new and replacement projects, energy recovery costs are typically offset by lower HVAC system first costs while up to 80 percent reductions in outdoor air fuel consumption provide healthy returns for the life of the HVAC system.

Energy recovery wheels may also be used to improve the efficiency of relatively new HVAC systems by up to 40 percent, providing one- to three-year paybacks when supported by the local utility.

Finally, energy recovery wheels enable building owners interested in marketing green, healthy buildings to increase outdoor air levels above minimum code, earning LEED points and reducing the risk of indoor air quality complaints.

HOW ENERGY RECOVERY WHEELS WORK

Enthalpy wheels transfer energy by rotating between outdoor air and exhaust airstreams to transfer heat and moisture from one airstream to the other. AHRI certification verifies the effectiveness of this energy transfer.

Total energy saved depends on the wheel's effectiveness and the difference in temperature and humidity between the two air streams. A bigger differential drives larger energy savings.

BENEFITS OF ENERGY RECOVERY WHEELS

- Energy recovery wheels offer many benefits, including:
- Reduce outdoor air energy costs 60-80%
- Reduce capital equipment cost by minimizing HVAC design loads
- Increase outdoor air levels two to three times without adding load to existing HVAC system
- Cost effectively improve HVAC system's control over indoor humidity to prevent mold and mildew
- Maintain building values by maximizing outdoor air ventilation and building health, thus creating positive public relation opportunities
- Enable building owners to participate in energy programs such as ENERGY STAR
- Provide instant to two-year paybacks in most North American climate zones

EXAMPLE: SCHOOL DISTRICT TRIPLES VENTILATION AND SAVES ENERGY

The Port St. Lucie, Florida, school district was faced with having to upgrade HVAC systems in five school buildings to meet changing air quality regulations. Upgrading to the revised code would require adding 479 tons of air conditioning to accommodate increased levels of outdoor air.

The district considered installing additional chillers and air handling systems, however, this method was determined to be impractical and costly due to space constraints and the complexity of the retrofit, which meant the project could not be completed during school break.

Instead, the district chose a simpler, more energy efficient and less costly approach: standalone ERVs with energy recovery wheels. The use of ERVs minimized installation costs by utilizing existing ductwork and eliminating the need for additional chillers saving 335kW in peak demand. A 70 percent reduction in outdoor air energy load saved the district an estimated $700,000 over ten years.

ENERGY RECOVERY VENTILATION SYSTEM OPTIONS

Energy recovery wheels are available from most HVAC original equipment manufacturers (OEMs) and distributors in a variety of configurations, including:

- **Energy Recovery Ventilators**: Mounted indoors or outdoors. May include heating or cooling to provide neutral air. Ducted separately or tied into existing ductwork.
- **Rooftop Accessories**: Bolt to rooftop units, no roof penetration required.
- **Integrated Rooftop Packages**: ERV wheel, fans, filters, and controls integrated into a standard packaged rooftop unit.
- **Air Handler Options**: Energy Wheel modules for custom, semi-custom, and standard air handler designs enabling a reduction in chiller and boilers size.
- **Wall Mounted Packaged Units**: Vertically mounted indoor or outdoor units with integrated ERV components.

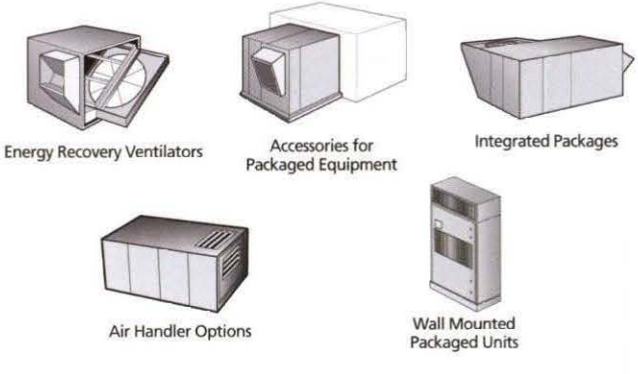


Figure 3: Energy recovery wheels are available in a number of configurations.

WHAT TO LOOK FOR IN ENERGY RECOVERY VENTILATION

- **AHRI-certified**: Products that are rated and certified by the Air-Conditioning, Heating and Refrigeration Institute

(AHRI) ensure that building owners and engineers design HVAC solutions based on verified performance data.

- **Temperature and humidity transfer capability**: Look for ERV solutions that efficiently transfer both heat and humidity, as this maximizes energy and capital equipment savings for the highest ROI.
- **Easy cleaning and low maintenance**: Seek a solution that is easily accessible for cleaning and maintenance. Energy wheels that cannot be cleaned are less effective over time, resulting in shorter life spans and unrealized energy savings.
- **Performance Modeling**: Look for a solution with computerized modeling software that predicts performance and savings. The most accurate programs incorporate weather trends and regional differences.
- **Trusted provider**: Choose AHRI 1060 performance certified providers to ensure the highest-quality equipment and strong customer service.

CONCLUSION

The high energy cost of outdoor air ventilation is a pressing issue among building owners eager to save money while providing a clean, healthy building. Energy recovery wheels offer an environmentally friendly solution to cut energy costs, provide fresh outdoor air ventilation, and guarantee a high return on investment.

ENDNOTES

1. *Site-recovered energy* is any energy recovered on site and reused to reduce the demand for new energy.
2. (2011). FlexYourPower. HVAC system.
3. Scott, J. (July 7, 2010). ASHRAE. Standard 90.1: Setting the energy foundation in buildings for 35 years. News release.
4. (November 30, 2009). ASHRAE Standard Project Committee 189.1. Standard for the design of high-performance, green buildings except low-rise residential buildings.
5. EPA, IAQ Design Tools for Schools.

Stephen Pargeter is vice president, product engineering, at Airxchange, a manufacturer of energy recovery ventilation (ERV) based in Rockland, MA. He can be reached at *info@airxchange.com*. This is his first article for *Facilities Manager*.

HACC Forms Biomass Gasification Research Partnership

By Joseph R. Wojtysiak and David Heck

Independence from foreign oil, improving energy security, and reducing global warming are just a few reasons to identify new sources of clean reliable energy.

In October 2010, HACC, Central Pennsylvania's Community College, and Enginuity Energy LLC formed a partnership dedicated to tackle these issues. A new biomass gasification research and development center was established to create renewable energy and to educate students for jobs being created within the renewable energy sector.

The mobile gasification equipment is mounted onto a 48-foot long trailer and is housed inside a 38-foot wide, 70-foot long, and 19-foot high green hoop structure. Syngas is produced during the patented gasification process, which powers a boiler to create steam. The steam can be used for thermal applications and/or to generate electricity to power a school, an industrial plant, a commercial complex, or the community. The facility is equipped with state-of-the-art emission control technology called an ESP (Electro Static Participator). The ESP will capture particles smaller than 0.25 microns from escaping into the atmosphere.

Existing gasification technology has restricted traditional biomass to uniform size, shape, and moisture content. The Ecoremedy® advanced biomass gasification lab at the HACC campus represents a quantum leap for the biomass industry because of its capability to accept irregular size non-traditional organic materials with a variable moisture content of up to 65 percent. Biomass eligible for testing includes, but is not limited to, corn stalks, beet pulp, apple cores, agricultural manures, mushroom soils, and more. A typical full-scale Ecoremedy plant can process tens of thousands to over 100,000 tons of biomass material annually.

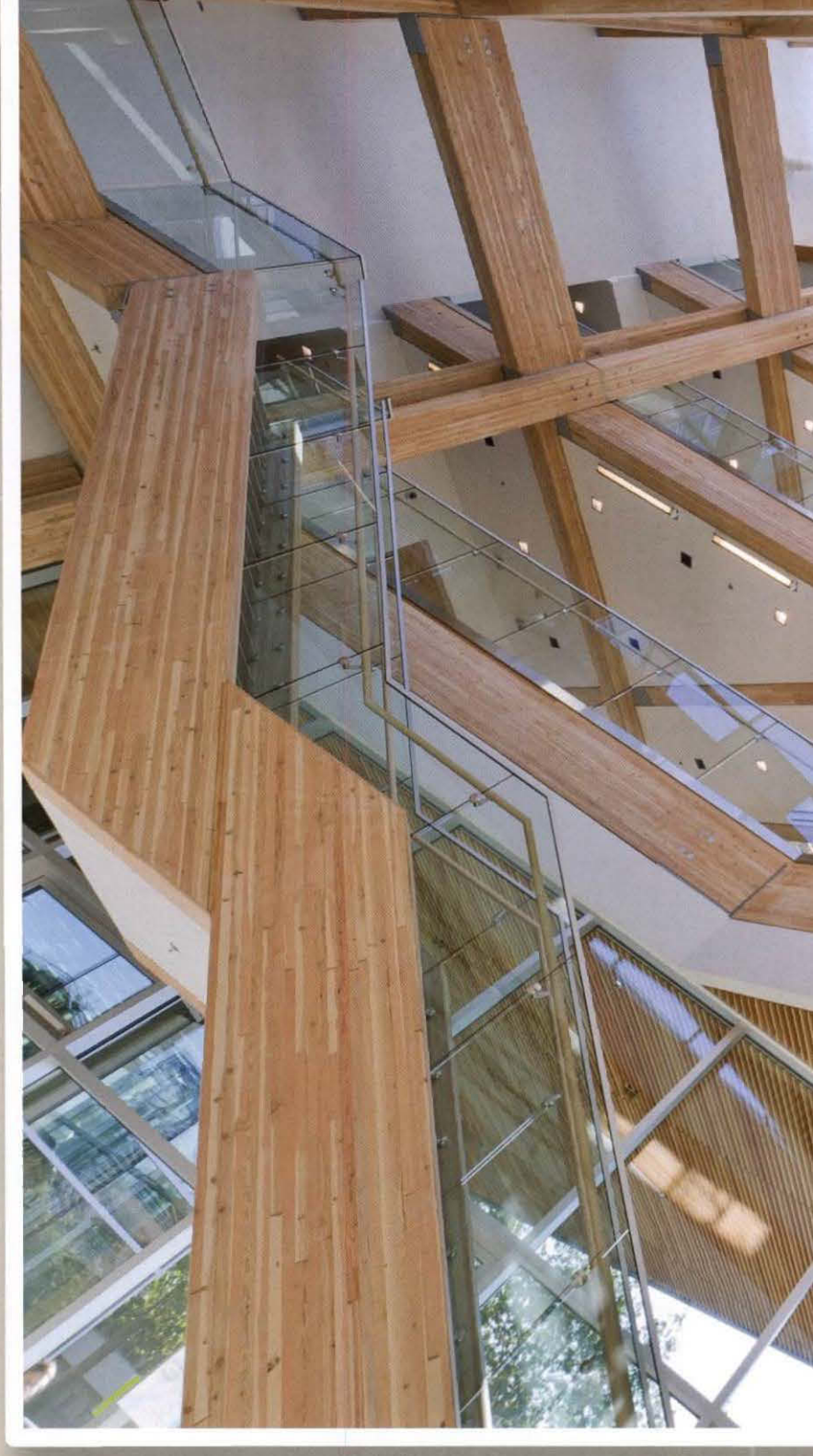
Animal manures, with their high nitrogen and phosphorous content, are a leading contributor to pollution of our waterways. Ecoremedy technology offers a means to assist Pennsylvania's efforts in cleaning the Chesapeake Bay. For example, a 3MWe Ecoremedy plant, fueled by poultry manure, could reduce Pennsylvania's annual Chesapeake Bay nutrient pollution targets by 3.5 percent for nitrogen, and 4.4 percent for phosphorous; prevent 34,000 tons of CO2; eliminate hauling 60,000 tons; avoid 15,700 acres of land application; and recover 10,000 tons of nutrients as renewable fertilizers.

Technologies, such as the one being tested at HACC, stands to play a critical role in both addressing our energy needs and improving the environment, most notably, our waterways. Video of the Ecoremedy Facility can be found on YouTube under *http://www.youtube.com/watch?v=lxdjUlsbduI* or search under "Ecoremedy".

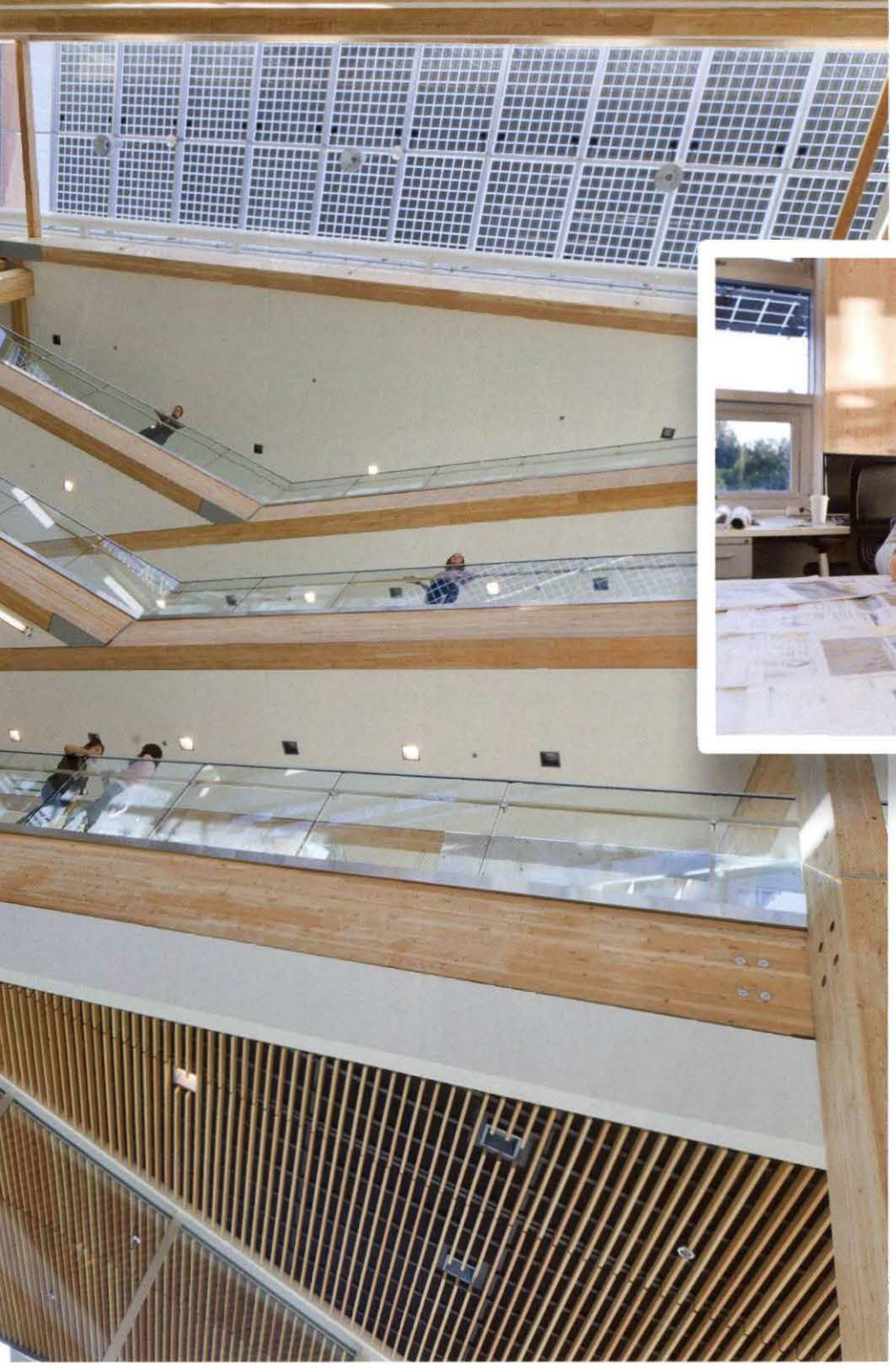
Joe Wojtysiak is senior director, facilities, at the Harrisburg, PA campus of HACC; he can be reached at *jrwojtys@hacc.edu*. David Heck is vice president of Enginuity Energy LLC, Mechanicsburg, PA; e-mail him at *daveheck@enginuityenergy.com*. This is his first article for *Facilities Manager*.

UBC's Centre for Interactive Research on Sustainability (CIRS) Will Serve as TEST BED FOR INNOVATION

By Tim Neary



The University of British Columbia (UBC) recently celebrated the opening of its Centre for Interactive Research on Sustainability (CIRS), a living laboratory for researchers to teach, test, and study the long-term impact of sustainable practices and technologies. Featuring advanced building controls, sensing technology, and management software from Honeywell, CIRS will serve as a leading academic hub to test and advance sustainable technologies before broader implementation, and operate as a center for green building policymakers to establish future standards.



DON ERHARDT

DON ERHARDT

UBC selected Honeywell as its technology provider at the outset of the planning process, and Honeywell engineers provided guidance on how to network and integrate the building systems that help manage the facility.

UBC and Honeywell also worked to ensure CIRS is one of the most sustainable buildings in the world. The research facility was built to Leadership in Energy and Environmental Design (LEED) Platinum and Living Building Challenge certification standards, the industry's most advanced green building benchmarks.

"The university's objective is to influence local, national, and global communities to become more sustainable," said Dr. John Robinson, executive director of the UBC Sustainability Initiative. "From the start, Honeywell and our other strategic alliance partners were dedicated to building a landmark research centre that will impact the direction of eco-friendly products and strategies. The result exceeded our expectations and is a boon for UBC, and the companies and policymakers who have dedicated themselves to building a more sustainable future."

Honeywell installed heating and cooling, fire alarm, and security technology in the building, and is using its Enterprise Building Integrator (EBI) to tie these and more than 80 other third-party systems into a single interface that will help the university operate the centre more efficiently and cost effectively, and provide a robust platform for faculty and students studying the impact of various green technologies and practices.

DON ERHARDT

"Research facilities like CIRS are not only going to change how buildings are constructed, controlled, and maintained, but they will produce the next generation of employees for Honeywell and the rest of the industry," said Paul Orzeske, president of Honeywell Building Solutions. "So we're honored to partner with UBC, and support its mission to be the world's premier academic hub for advancing sustainable technologies and public policies."

CIRS will utilize the latest comfort, safety, and security technology from Honeywell, including ComfortPoint heating, ventilation and air conditioning controls, XLS3000 fire alarm controls, and the Digital Video Manager surveillance system.

Honeywell EBI, a facility management platform that reduces operating costs by integrating building technologies across a common IT backbone, will manage the systems, and aggregate and report performance data. Researchers will use these metrics to examine how people interact with the technology to optimize the use of energy and other resources. EBI will also tie various third-party systems — such as lighting, utility metering, and rainwater collection — into the platform to provide a comprehensive view and control of all operations, which will aid researchers as well.

In addition, Honeywell will help UBC display details on the building's energy consumption and greenhouse gas emissions on the CIRS website and a customized dashboard inside the centre. Students and faculty who occupy the facility can also access a Web portal to adjust temperature and lighting conditions in their individual offices and labs.

As a strategic alliance partner, the company has also committed to supporting the facility and UBC's research efforts over the next five years. This will include ongoing product development, as well as collaborating with the university to test new building technology.

ABOUT CIRS

The Centre for Interactive Research on Sustainability (CIRS) is one of only a handful of buildings worldwide that will provide "net positive" benefits to the environment. It reduces UBC's carbon emissions, powers itself and a neighboring building with renewable and waste energy, and provides water for inhabitants with rainwater treated onsite.

CIRS will be an international centre for research, partnership and action on sustainability issues, including green building design and operations, environmental policy and community engagement. Researchers will study users' interactions with the facility to improve building performance, maximize the happiness, health and productivity of its inhabitants and advance best green building practices at UBC and abroad.

Learn more about UBC sustainability at *www.sustain.ubc.ca/hubs/cirs*.

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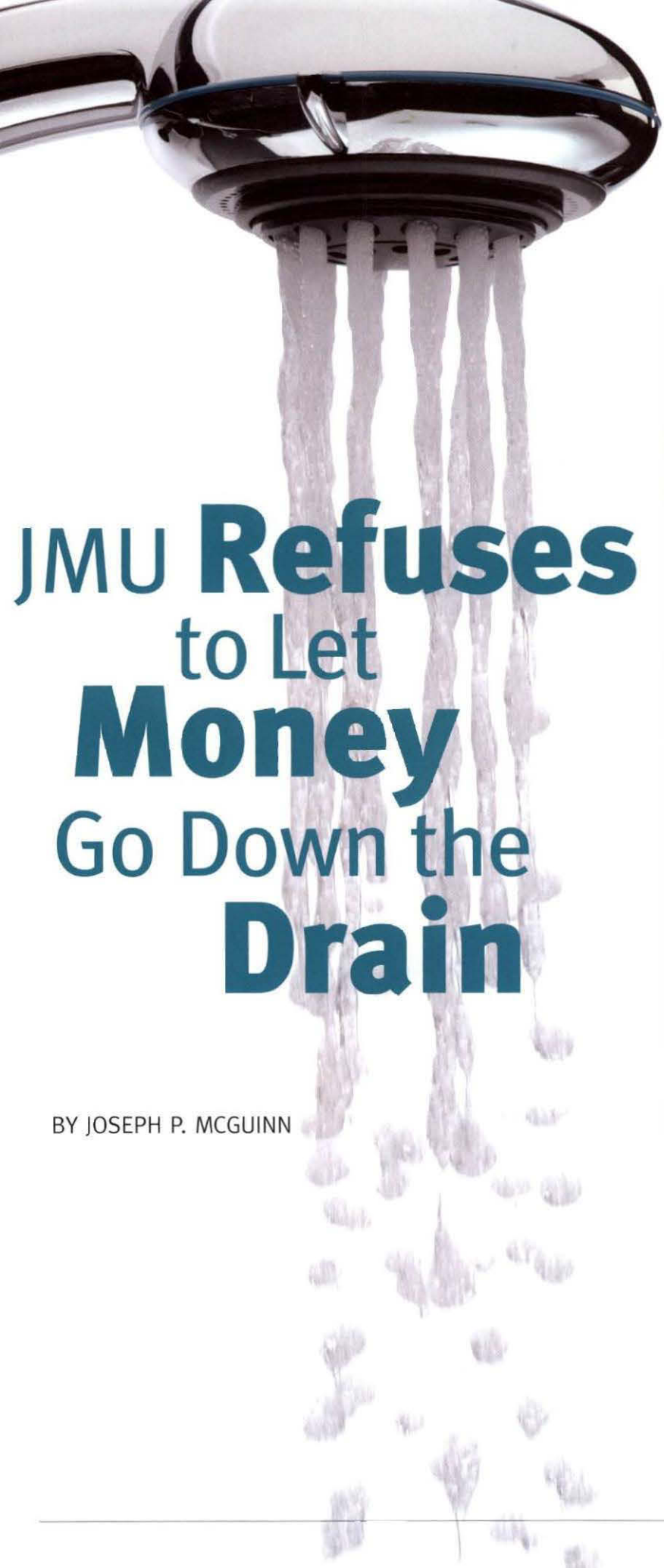


JMU Refuses to Let Money Go Down the Drain

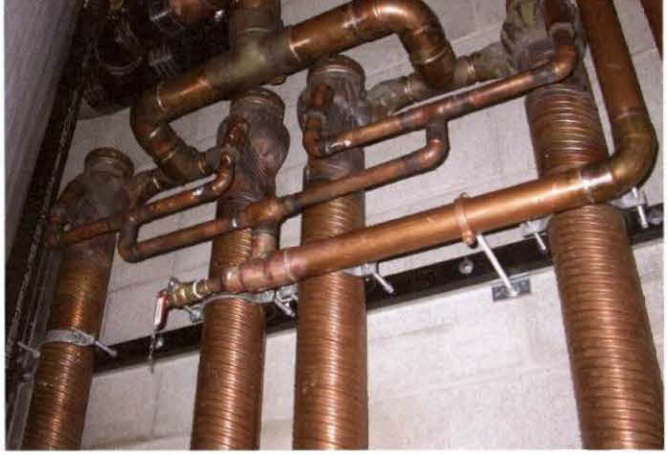
BY JOSEPH P. MCGUINN

James Madison University in Harrisonburg, Virginia has embarked on a rational means to reduce energy costs and provides a sustainable approach to student housing. The investment to install a Drain Water Heat Recovery system (DWHR) at Wayland Hall is estimated to pay for itself in less than three years but will provide dividends for over 40.

VMDO Architects of Charlottesville, Virginia, with principal David Oakland AIA, LEED AP, initially suggested to JMU that a LEED accreditation for the renovation of the historic residence hall would be a good idea in the current construction climate. He suggested a Silver Certificate would not be difficult to achieve.

The administration at JMU was so convinced by Oakland's argument that they asked to see if it would be possible to get to the Platinum level. Oakland enlisted his associates Michelle Westrick AIA, LEED AP and Frances Lengowski AIA, LEED AP to investigate options to get to the Platinum level. Westrick cited a recent project at Harvard that successfully used a DWHR system in a laboratory to reduce water heating costs for sanitizing equipment. That led her to contact RenewABILITY Energy Inc. in Waterloo, Canada about the product. VMDO then contacted Lawrence Perry & Assoc. of Roanoke, Virginia to handle the mechanical design. Under the lead of Mike Wolfe, CPD, they created a design that took advantage of the DWHR system for the residence hall showers.

The DWHR system is essentially a double-walled heat exchanger that takes the already heated water used for showers (or other processes) and recaptures that heat before it goes down the drain. The type L copper unit is installed in the drain stack and as incoming cold water is introduced, it is preheated by the drain water. Because Weyland



Hall is a long three-story building as opposed to a tall building, this particular system incorporates three C4-72 Power-Pipes installed in parallel in each of two drain stacks at either end of the building and one in the mechanical room for a separate apartment for a total of seven units. The renovation was based on having four showers in each bathroom and the DWHR units were installed in the showers vertical drainage stack under each floor. Each C4-72 is 4" in diameter and 6'-0 in length. This extracts the shower water heat and preheats the incoming replacement cold water, which is introduced in a 1" pipe that connects to a rectangular copper tube that surrounds the drain pipe. This creates a counter flow arrangement to maximize heat exchange efficiency and surface contact to produce a 63 percent efficiency rating for this unit.

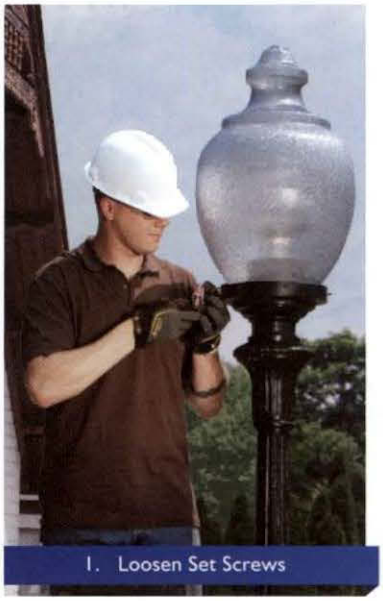
There is a falling film effect on the drain pipe caused by surface tension of the drain water on the drain pipe. In practical terms, the drain water is measured at 99 degrees F, the incoming cold water is at 48 degrees F, and the preheated water exits at 86 degrees F. The preheated water is delivered directly to the cold water side of the showers to reduce the tempering levels. The incoming flow can handle 10 gpm at a pressure of 160 psi. Cold water for other uses is diverted to those locations prior to going through the Power-Pipe.

Andy Wielicki, of the general contractor Donley's, stated the installation was straightforward and without issue. The Power-Pipe has no moving parts and comes with a ten-year warranty.

The Power-Pipe was specified under division 22 and Rick Hughes of LP&A who is managing the LEED certification process, has put it under the Energy & Atmosphere category and calculated a minimum of a 25 percent reduction for energy to heat hot water.

The building was occupied in fall 2011 and has performed as anticipated and without any problems.

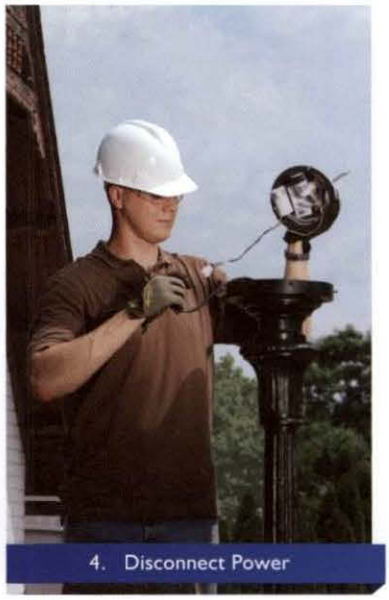
Joe McGuinn is managing director of Sustainable-Associates, Alexandria, VA, and a representative for RenewABILITY Energy. E-mail him at *jpmcguinn@intellistructures.com*. This is his first article for *Facilities Manager*.



1. Loosen Set Screws

2. Remove Globe

3. Remove Lamp and Refractor



4. Disconnect Power

5. Connect Power to LED Conversion Kit

6. Tighten Set Screws

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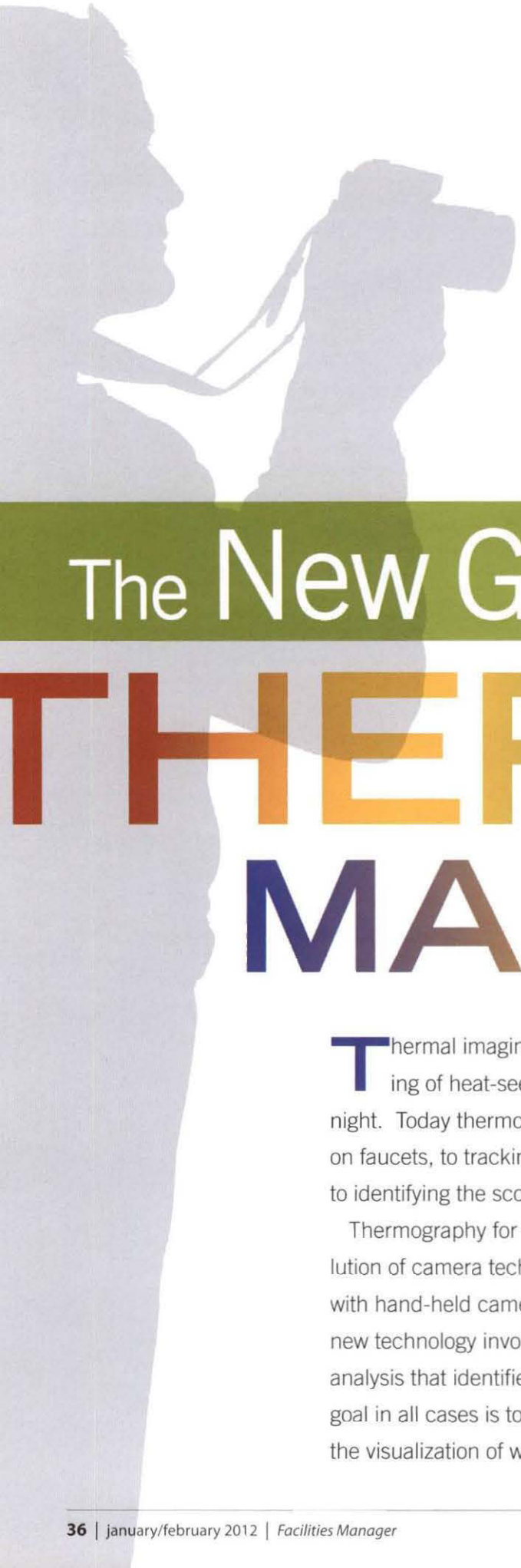
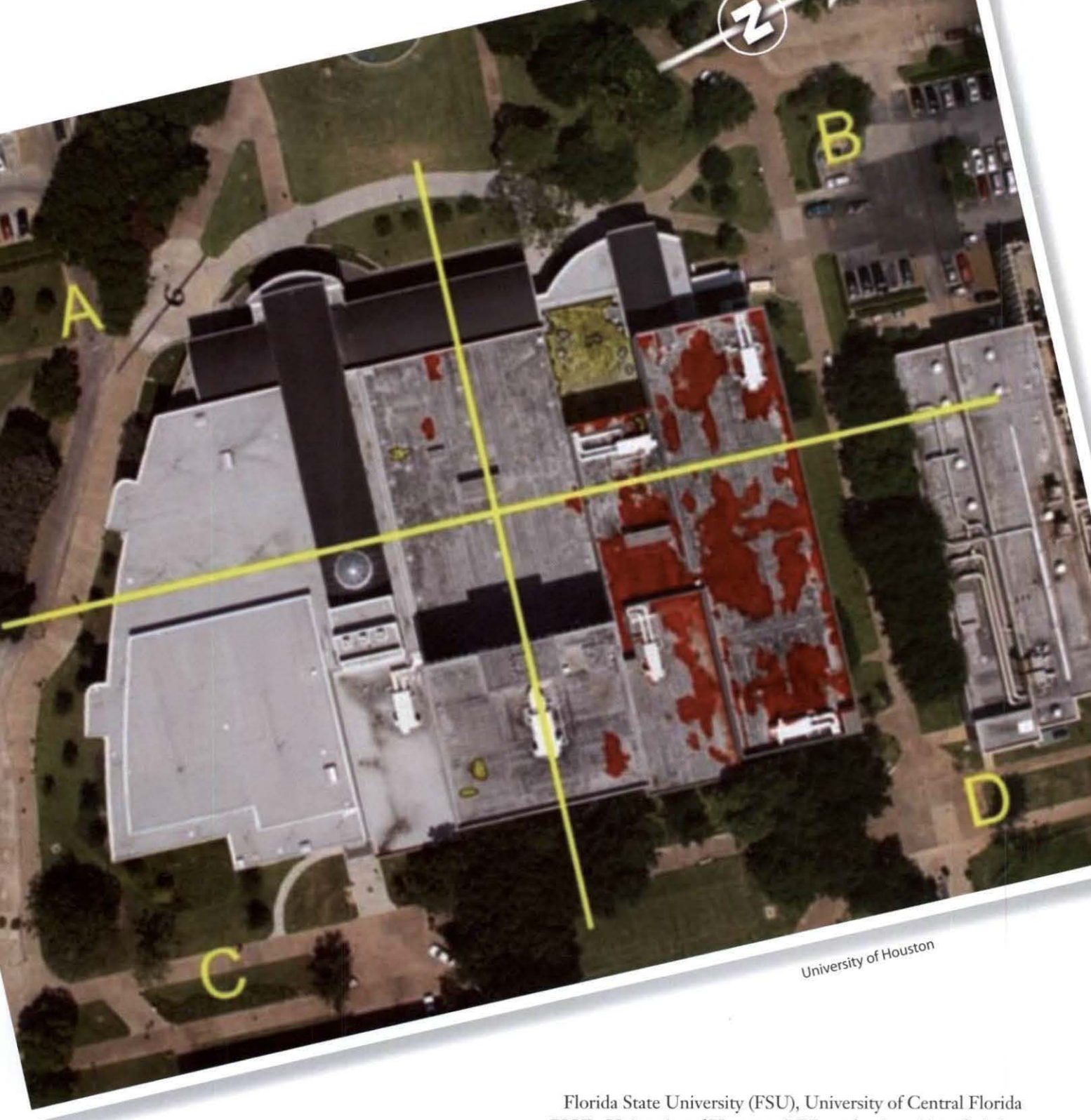


BY VALERIE B. PATTERSON

The New Generation of THERMAL MAPPING

Thermal imaging was used 60+ years ago to enable the targeting of heat-seeking missiles and seeing opposing forces at night. Today thermograpy is employed for myriad uses, from turning on faucets, to tracking and attacking enemies from aerial spy drones, to identifying the scope of moisture infiltration in building envelopes.

Thermography for facilities management has gone through an evolution of camera technology and procedures starting six decades ago with hand-held cameras and men walking on roofs in the dark. The new technology involves aerial data collection and patented computer analysis that identifies wet materials invisible to the naked eye. The goal in all cases is to accurately see inside roofs and walls to enable the visualization of what is invisible.

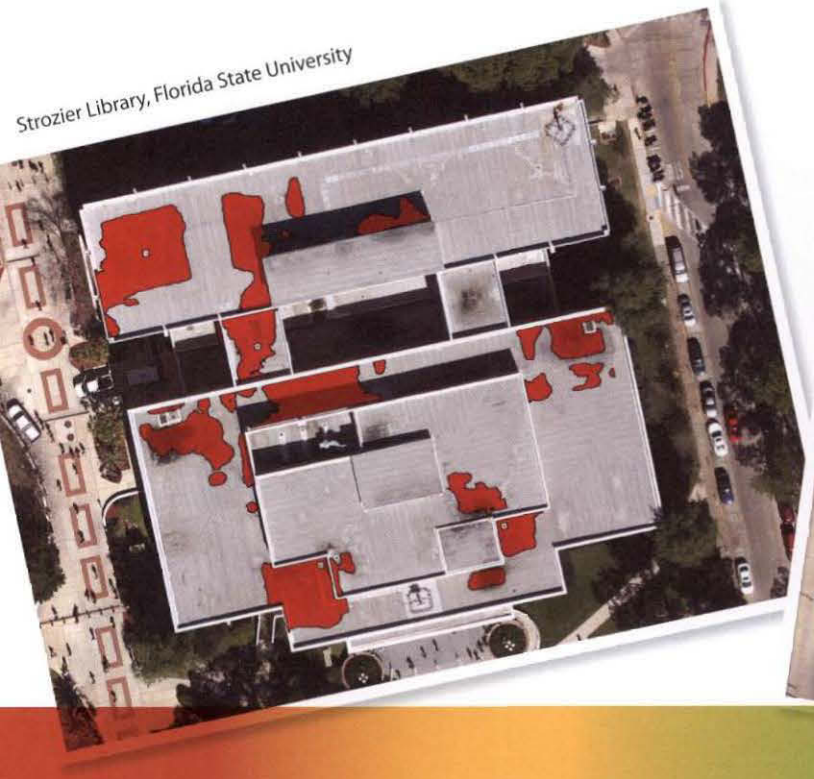


University of Houston

Infrared Concepts Corporation (ICC) is a building diagnostics company using thermal imaging that includes destructive core testing and independent lab verification in their service to confirm the accuracy of their non-destructive reports. ICC married this once classified military technology with proprietary medical MRI software and analysis, to achieve a patented process that clients have proven accurately identifies building envelope moisture infiltration. The results have been validated as being many times more accurate than other traditional thermography methods.

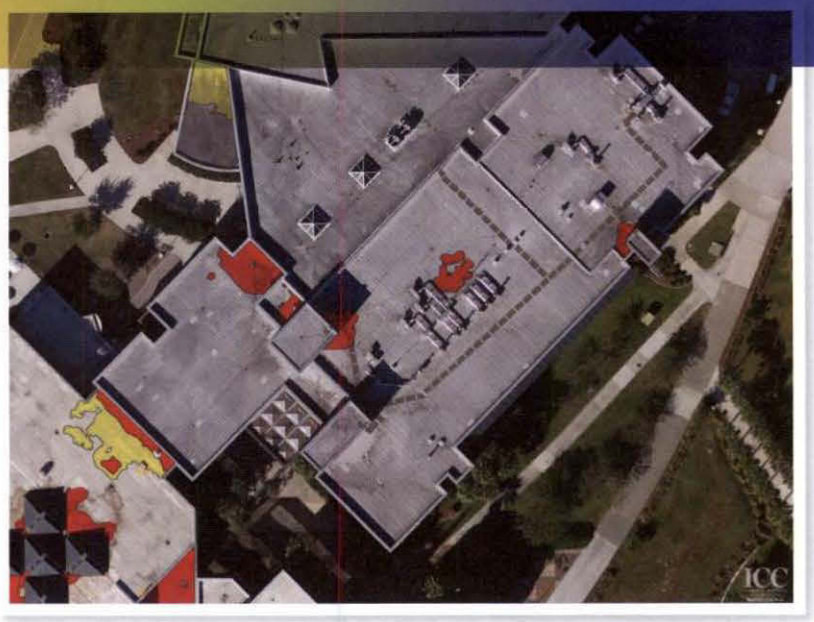
Florida State University (FSU), University of Central Florida (UCF), University of Houston (UH), and universities administered by the State of Mississippi are among campuses that have secured the patented reports and proven the accuracy of the diagnostic intelligence by validating the results through coring and lab testing.

MRI-like software analysis sees hundreds of times more data than can be seen by the human eye, and is combined with helicopter-based "stare" technology from a hover position as data collection platform and a camera with an InSb-cooled sensor. We have experimented with using an airplane, but the helicopter-collected data is far superior.



Strozier Library, Florida State University

Mississippi Valley University



University of Houston

Confirming accuracy of all non-destructive testing is paramount. Roofing is a $19 billion industry, and everyone who profits wants to encourage total roof replacement. However, restoration is often the wiser investment. By looking inside the roof with thermography and getting confirmation of the results, real science becomes a guide to the best course of action.

Florida State University (FSU) has been using thermal mapping for 12 consecutive years to inspect every low-sloped roof on the campus. FSU's Tom Shewan, P.E., asserts the technology assists them in finding leaks the first time, deciding whether to repair or replace a roof and holding installing contractors accountable. "We have used [this technology] to manage roofs in place that are more than 40 years old, and we forced a contractor to completely tear off and replace a new roof," says Shewan. "We believe that our investment serves us better and is less expensive than adding staff. Our zone managers convey that the reports help them identify leaking problems quickly so they can be resolved."

Dave Irvin, vice chancellor at the University of Houston, states that the value and the unique accuracy of [thermal mapping] became real to them after Hurricane Ike. According to Irvin, UH tried physical inspection, a hand-held walk over infrared survey, and an outside architectural/engineering firm to assess damage. Using all these techniques resulted in only four or five problem roofs and $4 million in damage.

BY LOOKING INSIDE THE ROOF WITH THERMOGRAPHY..., REAL SCIENCE BECOMES A GUIDE TO THE BEST COURSE OF ACTION.

"After using thermal mapping, we were able to justify over 30 problem roofs and receive a final award of over $26.3 million," says Irvin. "Several years following Hurricane Ike, UH is finding that leak reports on many buildings have been reduced by 98

percent. Because UH now has water-tight structures, buildings are experiencing a 10 degree temperature shift, so we know we're enjoying significant energy savings."

Irvin says UH updated ICC's Hurricane Ike report with another inspection following the roof replacements and repairs and were able to resolve defects created by the contractor when making the replacements. "Had these defects gone undetected combined with having not received the additional $22 million in restoration funds received from FEMA and insurance," says Irvin, "the university would have been heavily burdened with the cost of water infiltration related mistakes."

Irvin has since become vice president of facilities at the University of Tennessee in Knoxville and plans to utilize the technology there as well.

The State of Mississippi is implementing recommendations presented in APPA's Facilities Management Evaluation Program (FMEP) report, which includes accountability and injecting new game-changing technology to improve decision making. The State of Mississippi's Glenn Kornbrek, director of the Bureau of Buildings, tested ICC's service on 400 buildings throughout six university campuses. "ICC identified 10 to 20 roofs that are proposed for replacement that may be salvageable. We've conducted coring and gravimetric analysis on one campus so far and found ICC's accuracy to be 100 percent on all areas identifying probable moisture. Should the remainder of the coring effort prove the same, the potential exists for saving or reallocating millions of dollars," says Kornbrek. "We see one of their greatest benefits is identifying moisture problems while they are still small, instead of allowing them to escalate into a total roof replacement."

The University of Central Florida (UCF) has also enjoyed the benefits of their patented reports, multi-level AutoCAD and Web-based reports. "We recently cored and gravimetrically tested roofs verifying ICC's results," says Frank Ballentine, assistant director of physical plant operations. "In some cases the cores were four to six times the threshold identified by the Florida Building Code justifying insulation replacement. The reports were 100 percent accurate in terms of the cores identified as dry."

Valerie Patterson is president of Infrared Concepts Corporation, Maitland, FL; her e-mail is *valerieicc@cfl.rr.com*. This article was adapted from her presentation at the 2011 SRAPPA conference and is her first for *Facilities Manager*.

Indiana State University Graduates to Advanced Plastic Cooling Towers

BY ED SULLIVAN

Perhaps more than many other industries, today's universities and colleges are beset by dramatically rising costs on every front. One of the areas where overhead can be contained or reduced is in the operation of the chilled water systems that support air conditioning throughout college campuses, specifically the cooling towers.

Like many institutional, office, and processing facilities, some colleges and universities are upgrading their cooling towers from the outmoded designs constructed with galvanized steel-sheeted shells, to the more advanced models that are based on shells constructed of engineered plastics. These newer designs, particularly those constructed with seamless, HDPE (high-density polyethylene) shells, require much less maintenance, are more energy efficient, and often virtually eliminate costly downtime.

In a recent case, Indiana State University (ISU) began installing the engineered plastic cooling towers at its 190-acre main campus located near the center of Terre Haute in west-central Indiana. ISU residences, academic centers, labs, recreational, and sports facilities are situated in a park-like community that is separate from the rest of the city and maintains an impressive infrastructure of its own.

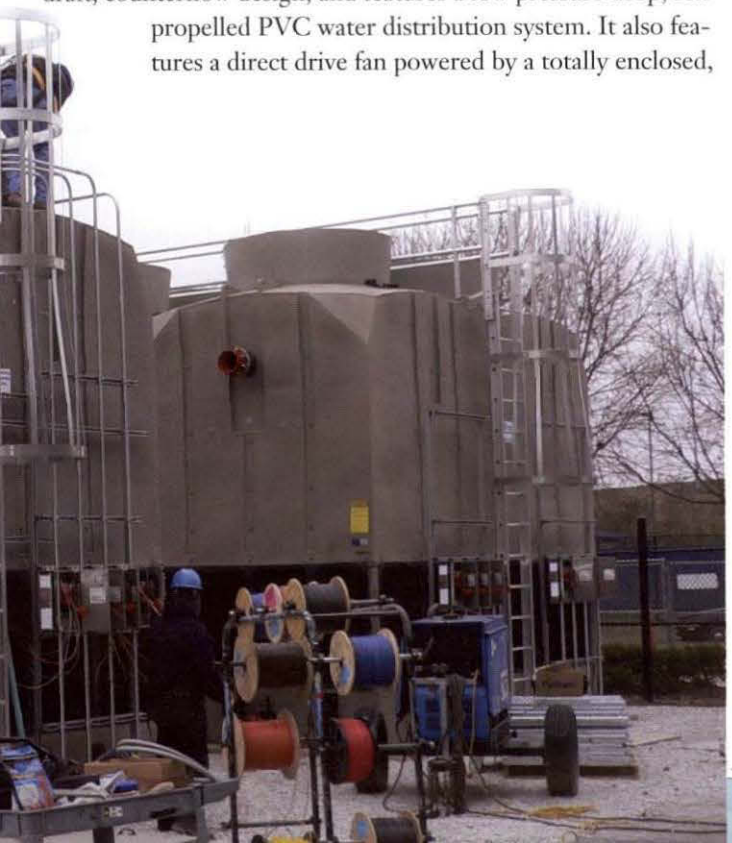
Several new cooling towers manufactured by Delta Cooling Towers, Inc. have been installed or are planned to support the central and satellite chilled water systems that supply the campus's many academic, student, and research facilities.

"SMARTER" SYSTEMS CHOICES

"About two years ago we were nearing the completion of a renovated building that became the College of Education," says Mark J. Pupilli, ISU building and facilities manager. "Because the capacity at the central chilled water plant had become nearly exhausted, we decided to install a stand-alone chiller and also allow the building to be connected to the chilled water plant. So, of course, we were going to need a cooling tower. At the suggestion of one of our suppliers, AC Equipment in Indianapolis, we looked at the Delta plastic cooling towers."

Pupilli explains that the Delta line offered many features that he liked, and the fact that they were engineered plastic meant that many maintenance issues could be avoided. He was also impressed with the selection of available models, the product quality, and a long-term (15 years) warranty on the double-walled HDPE shells.

After considering the applicable designs, Pupilli decided to purchase a 550-ton Delta Premier Series tower for the new College of Education building. This model is an induced draft, counterflow design, and features a low pressure drop, self-propelled PVC water distribution system. It also features a direct drive fan powered by a totally enclosed, energy-saving VFD motor. Modular construction allows this tower to be clustered to provide greater cooling tonnage. The cooling tower design is relatively light in weight, impervious to UV rays, and virtually corrosion-proof.



More recently, ISU received funding to build a satellite chilled water plant to provide some redundancy as well as much needed additional capacity in the central chilled water system.

"When we were working on the design of the satellite chilled water plant, we realized that we wanted to utilize Delta cooling towers at that location as well," says Pupilli. "And so I have two four-cell TM Series towers with a cooling capacity of 2,500 tons at the new satellite chilled water plant. Each of the towers is connected to a VFD. The facility was completed and turned over to me in summer 2011."

> WE HAVE NOT HAD ANY PROBLEMS WITH THE COOLING TOWERS AND LOOK FORWARD TO MANY YEARS OF TROUBLE-FREE OPERATION.

The configuration at the satellite plant is two banks of four TM towers, Pupilli says, but that are operated as eight separate towers. "We also have the space to expand the facility in the future," he adds. "For example, we could put in another 2,500-ton chiller in there at a later date, and also add two more banks of eight cooling towers."

The TM Series is a selection of induced draft, counter flow design cooling towers that are available in single unit capacities from 250 to 2,000 cooling tons.

"The towers that have been installed are working painlessly," says Pupilli. "We did have a minor fan motor problem, but the treatment we got from Delta has left a positive impression because they took care of the matter so quickly. We have not had any problems with the cooling towers and look forward to many years of trouble-free operation."

Pupilli says the primary maintenance issue with the metal cooling towers was the need to do a lot of coatings and repairs. The main reason for going with the newer, engineered plastic technology was the expectation that those problems would go away.

In addition to the coatings problems Pupilli describes, many of the galvanized metal-clad cooling towers require even more expensive repair as well as frequent replacement. Because of the corrosive nature of water, the chemicals used to treat it, and locations where they are found metal towers will require extensive maintenance and costly repair or replacement bills.

Ed Sullivan is a Hermosa Beach, CA-based writer. He has researched and written about high technologies, healthcare, finance, and real estate for over 25 years. This is his first article for *Facilities Manager*. For more information, contact *sales@deltacooling.com*.

Bard College SHINES

By Gerhard Klier

With its park-like campus location overlooking the Hudson River and Catskills Mountains in New York's Hudson Valley, it's no wonder that Bard College is committed to being green.

At the liberal arts college in Annandale-on-Hudson, students learn and live in 25 geothermal buildings on campus that don't burn fossil fuels on site. Instead of driving to class, they walk, take shuttles, or even can borrow electric bikes. When their old light bulbs blow out, they trade them in for compact fluorescent light bulbs supplied by the college, which has given out more than 1,000 of the more efficient bulbs.

The newest innovation—solar thermal panels for hot water at two residence halls—is the latest example of the college's forward-thinking efficient and ecological initiatives as well as being an energy- and cost-saver.

The solar thermal project is part of Bard's ongoing green initiatives and another step toward meeting the goals in the American College & University Presidents Climate Commitment pledge signed by college president Leon Botstein in 2008.

STIMULUS FUNDING FOR SOLAR

The solar thermal system uses radiation from the sun to generate heat for hot water for about 100 students living in the two residence halls—Tremblay and Keen—for showers, washing their hands and dishes, and other uses.

Bard received grant funding for the $112,000 project under New York State Energy Research and Development Authority (NYSERDA)'s administration of the State Energy Program funded by the American Recovery and Reinvestment Act (ARRA). The grant covered 90 percent of the costs for the solar systems at the two residential halls as well as advanced monitoring at one building.

"Students love the endless hot water and pride themselves on being green," said Laurie Husted, the college's sustainability coordinator. "It also teaches the students, staff, prospective students and other visitors about Bard's environmental focus and how they can participate."

The system was designed and installed in January 2011 by EarthKind Solar with no interruption to student services. At Tremblay Hall, eight collectors were installed on the roof while 11 collectors comprise the system in Keen Hall.

RECOVERY ACT

Bard College received this award from the U.S. Department of Energy's State Energy Program. The State Energy Program provides grants to states and directs funding to State Energy Offices from technology programs in DOE's Office of Energy Efficiency and Renewable Energy. States use grants to address their energy priorities and to adopt emerging renewable energy and energy efficiency technologies. SEP is distributing $3.1 billion of funding to the states and U.S. territories under the 2009 Recovery Act.

SILVER STAR RATING

An early adopter of renewable energy technologies in its building construction since the mid-1990s, Bard has been recognized as a sustainability leader among colleges in the state and country, having recently earned a silver STARS (Sustainability Tracking Assessment & Rating System) rating from the Association for the Advancement of Sustainability in Higher Education.

In achieving the rating using the STARS transparent, self-reporting framework for colleges and universities to measure their sustainability performance, Bard was recognized for the innovative enhanced monitoring and verification installed on

the solar thermal system at Tremblay Hall.

The data now being collected using this enhanced solar thermal monitoring system from the solar water heating system is giving a real look at how solar thermal technologies work in this region of the United States. And the results from the system that provides extensive data every ten minutes, show the real value—in both cost savings and to the environment—of solar thermal systems.

Students living in this residence hall at Bard College get most of their hot water from the sun, thanks to a new solar thermal system.

"It is exciting both operationally and academically," said Husted. "We have faculty that are taking hold of the data for use in the classroom and research."

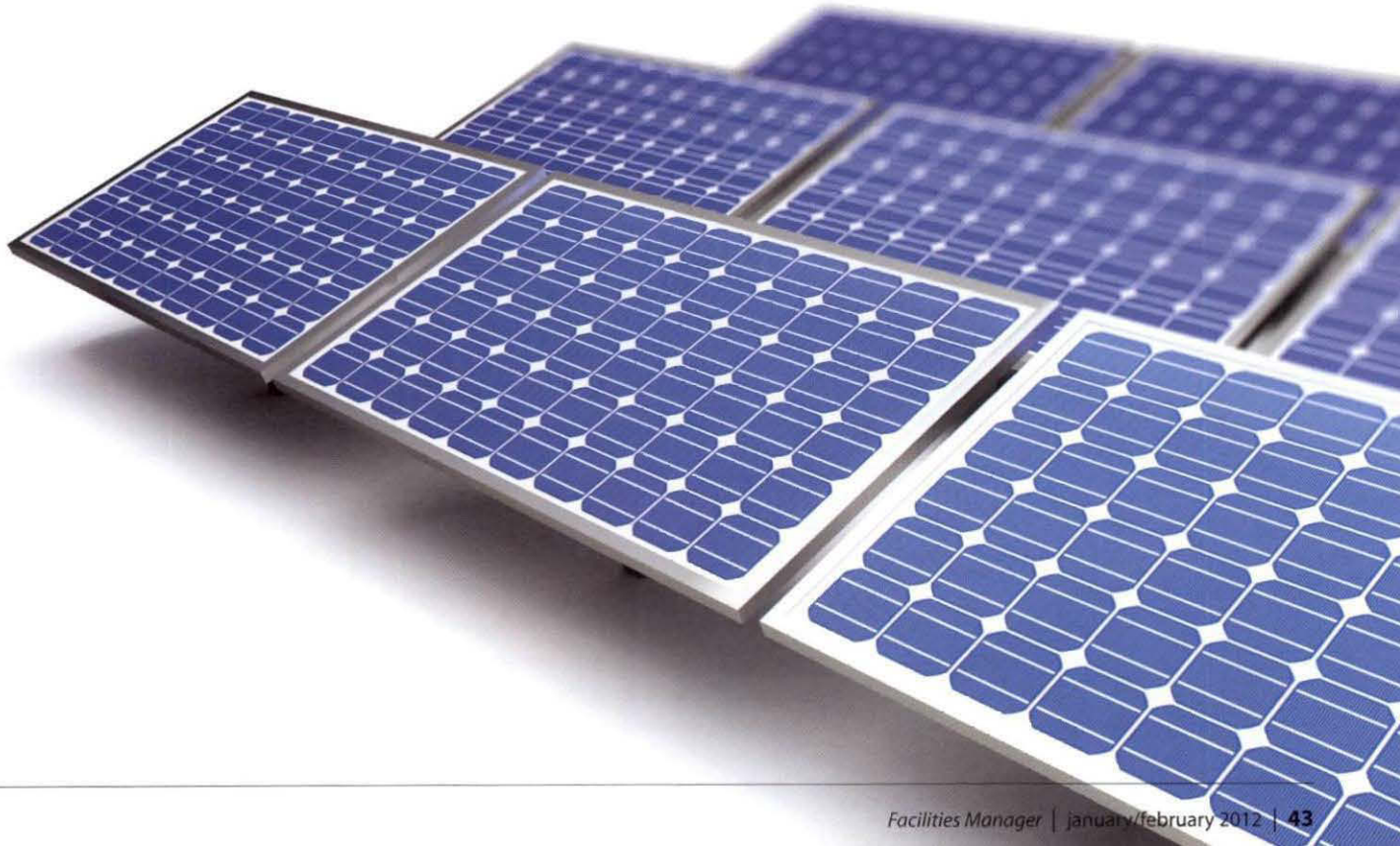
Since installing the roof-top solar collectors at the start of the 2011, Bard expects to save about $10,000 annually at Tremblay, plus the additional savings at Keen. Monitoring shows that the systems are working according to expectations. The Tremblay hot water consumption is almost covered with 85 percent of the energy supplied by solar.

Rising in popularity, solar thermal systems are as much as 80 percent less expensive than photovoltaics (PV or solar electric) systems that use solar radiation to directly generate electricity.

Solar thermal systems work by using the sun to heat a fluid running through the solar collectors and then circulate it to the storage tank. Internal heat exchangers inside the tank transfer the heat absorbed by the collector to the water in the tank. This pre-heated water is then stored for future use.

"Solar thermal is playing an important role in helping Bard reduce is carbon footprint and lower our reliance on fossil fuels," Husted said.

Gerhard Klier is engineering manager and systems designer at EarthKind Solar in Kingston, NY, and a professor and lecturer for renewable energies at SUNY New Paltz and SUNY Ulster. He can be reached at *gerhardklier@earthkindenergy.com*. This is his first article for *Facilities Manager*.



Using the APPA Facilities Performance Indicators (FPI) Survey

By Al Stoverink, MSPA

If "Knowledge is Power," then our ability to be effective in a "seat at the table" depends in large part on the quality and quantity of the information we can bring to the discussion. This article offers a brief review of how Arkansas State University Facilities Management is using the APPA Facilities Performance Indicators (FPI) Survey to expand resource access and develop improved relationships with critical information for executive council, deans, and other campus stakeholders. The APPA FPI Survey now includes almost 400 campuses with a wide array of data reports and a solid group of representative benchmarking peers for almost any size or type of institution.

The FPI Reports provide a great set of external benchmarking graphs that allow us to benchmark against peer or aspirant institutions in a wide variety of operational and asset management areas. More importantly perhaps, the FPI Reports provide critical benchmarking for self assessment and continuous improvement, particularly when used in conjunction with an overall continuous improvement performance measurement program. This is essentially what we have put in place at Arkansas State University. As a result, we have been able to enhance our performance measurement efforts internally with credible external benchmarking that allows us to communicate relevant and reliable information to decision makers and partners on campus.

One of the key benefits of this benchmarking and performance measurement effort has been the expansion of critical budget resources in multiple areas, even during times of tight state budgets. One example of successful impact has been the gradual expansion of our Landscape Maintenance staffing and supplies budget.

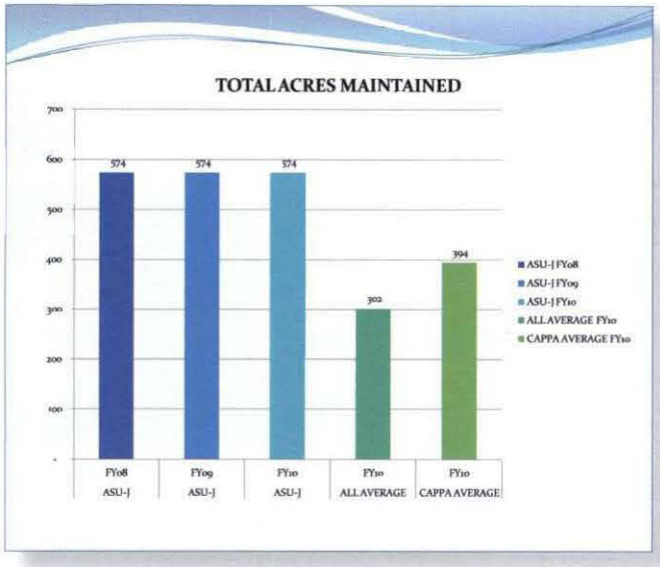
In 2008, the university welcomed a new chancellor to the campus, replacing someone who had been in that position for 15 years. Soon after, the new chancellor introduced me to a new set of expectations on landscape maintenance which he brought with him, based on his experience at a smaller institution. Not only was he unhappy with the level of landscape maintenance, but he was also interested in the possibility of outsourcing these services (as well as any other services) in facilities management. Our response was to quickly embark upon a serious benchmarking effort, which we had previously initiated in sporadic efforts, but without consistency or credible data.

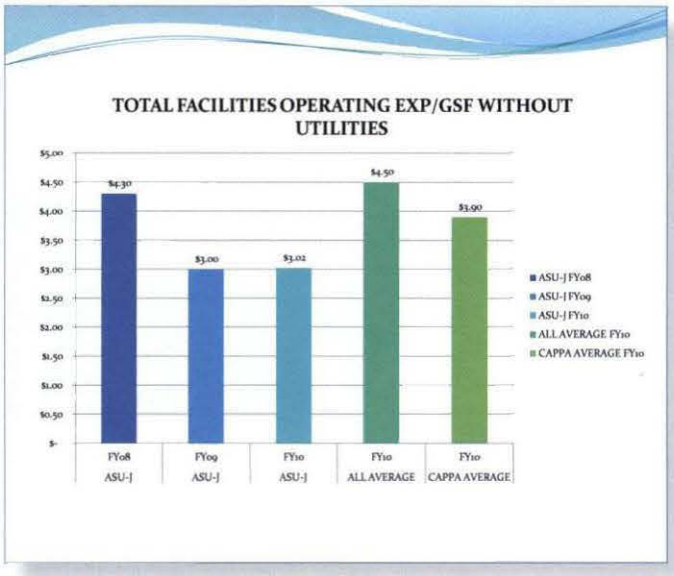
In the landscape area particularly, we were operating under an erroneous perception of the amount of acreage being maintained. Based on the way this number had been calculated in prior years, the university thought we were maintaining approximately 250 acres, similar to other institutions of our size. In reality, upon completing a review of our current campus land use, we suddenly realized that we were maintaining more than twice that number, which meant the demand on our budget, especially with the new expectations, was much greater than our resources.

We initially did a direct campus-to-campus tour and benchmarking comparison with four institutions in our region, then applied aerial geographic photo (downloaded from Google Earth) overlays of these institutions on our campus. We then pulled relevant data concerning operations costs and acreage from the APPA FPI Report Generator to expand the comparison to the larger universe of institutions.

THE FPI REPORTS PROVIDE A GREAT SET OF EXTERNAL BENCHMARKING GRAPHS THAT ALLOW US TO BENCHMARK AGAINST PEER OR ASPIRANT INSTITUTIONS IN A WIDE VARIETY OF OPERATIONAL AND ASSET MANAGEMENT AREAS.

This three-pronged benchmarking—i.e., geographic overlays, direct campus-to-campus data, and the APPA FPI data—yielded a compelling presentation we were able to make to the chancellor. His understanding of the challenges we faced caused an immediate shift in perception of our landscape maintenance program. Subsequently, we have





been able to add staff as well as obtain additwional supplies/services budget and encouragement from our vice chancellor for finance & administration to purchase equipment.

The above story involves some unique circumstances that would not apply for other organizations. But whatever the "unique circumstance" of any individual campus, the ability to present accurate, reliable information backed up by national data, specific to the issue at hand (available through the FPI Survey), can make a difference in any circumstance. We have experienced similar results in being able to show relatively low operating costs in custodial and other areas of facilities management.

In addition, we have also been able to show benchmarking data from the FPI that confirms the low level of capital investment for deferred maintenance currently budgeted. This has been a factor in garnering greater recognition of the needs and support for project funding.

We have developed a standard FPI benchmarking data sheet that is shared with the executive council, deans council, and university planning committee (aka budget). This information tool has elevated awareness around campus of continuing needs and a perception that we are good stewards of the budget resources provided. The result has been expanded resources in landscape maintenance, support for increases in charge rates for facilities labor, increased special project funding from campus reallocation sources for capital renewal, full support for keeping facilities services in house, and an enhanced image of facilities management as a professional organization in pursuit of excellence.

Finally, all of these benefits have resulted from a very low cost investment. As a member of APPA, our only cost to access the data that has made such an impact is the cost of our time to input our campus data into the annual survey and to do some data mining when the FPI Report Generator is populated each year with the newest survey data. This time involves three people essentially in our organization—the business services director, the planning/design/construction services director, and me. This investment has had one of the higher rates of return on a wide variety of initiatives we have attempted in our overall organization development process. We commonly refer to this process as the "Journey to Excellence," which has lead to achieving the APPA Award for Excellence, and providing direction for staff throughout facilities management.

Al Stoverink is assistant vice chancellor for facilities at Arkansas State University – Jonesboro, and can be reached at *astoverink@astate.edu*.

The FPI Report can be accesed at *www.appa.org/research/fpi.cfm.*

ADA on Campus – Keys to Creating and Maintaining Accessibility

By David Handwork

The American with Disabilities Act (ADA) and the ADA Accessibility Guideline (ADAAG) have been a familiar topic of educational facilities managers for two decades. In March of 2012, the requirements of ADAAG will be replaced with the 2010 ADA Standards for Accessible Design.

Although the updated ADA rules and content in the 2010 publication are not radically different from the prior ADAAG publication, the change in document title from "Guideline" to "Standard" is fairly significant. Facilities managers will probably understand the difference in the two titles: clearly "standard" removes the general flexibility allowed with a "guideline."

Evidence of ADA legal settlements and accessibility corrective actions at colleges and universities between 2000 and 2009, in excess of $200 million, indicate several institutions and facilities management groups struggle with addressing campus accessibility. The new context "Standard" may help change any casual view of ADA compliance.

Admittedly, on this author's campus, accessibility complaints have been filed with the U.S. Department of Justice (DOJ), with subsequent DOJ campus investigations. Fortunately, complaints have not progressed to formal legal settlements, but corrective measures cited by DOJ were implemented with significant financial investment. These complaints have elevated campus accessibility awareness. Subsequently, the following three key operational strategies have been incorporated to improve campus accessibility.

BEING PROACTIVE INSTEAD OF REACTIVE

It is not acceptable for institutions to wait for a DOJ complaint to identify campus deficiencies in accessibility. Institutions that ignore requirements of ADA create a significant financial liability, and frankly ignore disabled students, visitors, faculty, and staff.

Being proactive in dealing with campus accessibility is not limited to new construction. It is the primary responsibility of facilities management leadership to identify accessibility deficiencies, organize and prioritize, and annually fund corrective measures. Even small institutions should invest an annual budget to systematically address the needs, but the budget should not be a trivial amount.

In the event a complaint elevates to a DOJ investigation or litigation, a genuine proactive approach demonstrates an institutions' attempt for accessibility compliance. Pro-activeness will not eliminate any fiscal liability if a complaint is elevated, but it certainly can help reduce the liable risk.

A specific proactive measure for APPA members is to engage in the code development process. ADA rule-making is unique, as it is not developed by a professional organization such as NFPA, ASHRAE, or ASME. The federal government via the DOJ provides avenues for public input for new rules, and

comment on proposed and current rules and standards. As with industry developed codes and standards, ADA rules and standards will not be appropriate for all applications, or they may not be sufficient. APPA members are encouraged to provide comment either to the Code Advocacy Task Force, but more directly to the U.S. Department of Justice at *www.ada.gov*.

CONTINUOUS EDUCATION OF STAFF

It is perplexing to observe facilities management groups at educational institutions investing minimal or no professional educational opportunities for FM staff. We support an educational industry! This is particularly true with code compliancy and related liability issues.

A significant factor in being proactive about accessibility is continuous education for the FM professional and trades staff. Several service providers in

all regions of the U.S. provide training venues and opportunities at low or no fees. Being active in international, regional, and state APPA meetings will also provide training sessions, as well as networking opportunities with knowledgeable ADA consultants and peer institutions.

If funding of ADA education is a hurdle, several free resources and webinars are also available online. One valuable resource for information and continuing education is *www.accessibilityonline.org*. If your campus has a specific department that supports campus accessibility, facilities should partner with them for training, information, and a collaborate approach to address campus accessibility deficiencies.

CHOOSING THE RIGHT DESIGNER AND HOLDING THEM ACCOUNTABLE

For new construction and renovations, a paramount factor for incorporating compliant accessibility is the knowledge and quality of the design professional and consultants that are hired. Many facilities professionals have shared at APPA forums and networking events the frustrating ADA shortcomings and their subsequent struggles to correct issues in newly opened buildings, recreation and sports venues, parking lots, and site projects.

Granted, even the best design professionals can make a mistake. However, it is incumbent on the facilities managers to thoroughly document all code deficiency issues that are design-related, and hold the designer financially accountable. Accessibility issues are just as important as life safety code issues. Post-occupancy remediation, especially beyond the applicable statutes of limitations, can be costly for institutions. Equally incumbent of facilities managers is thoroughly discussing accessibility compliance expectations with the design professional during the selection process and contract negotiation.

An equally important success factor of design professionals is applying the appropriate design discipline relevant to the project scope. Generally, the architect's scope of services is about the interior of the building. Site-related design is best dealt with by landscape architects and civil engineers who have extensive knowledge and skill designing with accessibility in mind.

Following these key strategies is merely a starting point. Every institution has common, as well as unique challenges when incorporating and implementing their particular code compliancy factors.

David Handwork is director of planning, design, and construction at Arkansas State University, State University, AR, and a member of APPA's Code Advocacy Task Force. He can be reached at *dhandwork@astate.edu*.

It's About Communication – Really

By Joe Whitefield

For facilities managers, every day can be assessment day. We are fully engaged in facilities management programs that involve developing strategies and establishing goals, leveraging resources, leading people, and managing the execution of the various steps toward goal attainment, while promoting a positive and healthy work environment. Effective leadership not only steers these programs and processes, but also seeks to improve them. And continuous improvement requires continuous evaluation.

How applicable is the strategy? How relevant are the goals? How well are we performing? What should we add, change, or discontinue? Answers to these questions are being revealed every day in some form – even if the questions are not being formally asked.

COMMUNICATION IS KEY

With that as a backdrop, there is one aspect of leadership that's value is easily underestimated in this "get it done" environment—that is communication. Yes, everyone knows communication is important, but do we know just how important? Communications consultant Bob Aronson says, "If communication is not your top priority, all of your other priorities are at risk." As I reflect on my organization, I am coming to believe this statement is quite true and is, therefore, becoming more important every day.

The topic of communication can be broad and somewhat complicated due to its many facets. Still, most people agree that communication is important in any organization and/or relationship. Many will even confess to be lacking in some communication skills. But the urgent matters of the day take over, demanding our time, and leaving little or no attention—to our communication processes.

Many times, poor communication can be the actual cause of a particular problem. You might recall the St. Louis Cardinals winning the 2010 World Series in seven games. But did you remember that they lost game five of the series when there was a communication problem between the manager and bullpen coach? And so, the Cardinals best pitcher was not ready to pitch in the 8th inning. The Texas Rangers got a key hit that drove in the decisive runs in their win. The strategies were in place and the players were prepared, however the game turned on one phone call. Thankfully for the Cardinals, and their fans, they won the next two games to win the series—even though they came within a single strike (on two separate occasions) of losing the series in game six.

> "IF COMMUNICATION IS NOT YOUR TOP PRIORITY, ALL OF YOUR OTHER PRIORITIES ARE AT RISK."

The effects of poor communication are the same in our organizations. Even if it is not the root problem, poor communication can simply make a problem worse. Either way, effective communication is a critical component of a healthy facilities maintenance organization.

Let me recommend that you take time to review the simple idea of communication

C Completion
O Organization
I Innovation
N Being Nice

within your organization and across your campus. Between phones, faxes, e-mails, texts, tweets, meetings, presentations, and face-to-face conversations, there is no shortage of contact.

But not all contact is communication. Today, we can be inundated with so much data and information that it is a challenge to sort the relevant and useful from the irrelevant. Think about important information that needs to be shared that is routinely not shared. Think about information that is being shared but not understood. Think about information that is being shared that doesn't need to be. Think about the methods used to share information. Do they promote understanding? Or do they add to confusion and misunderstandings? And think about the timing of communication.

There are three basic periods of communication. Communication before an activity begins sets the expectations, defines success, and establishes points of accountability. Communication throughout an activity reports on execution and provides progress updates. Post-activity communication provides feedback and critiques outcomes versus expectations. Each of the issues should be tailored for your different audiences.

COMMUNICATION WITHIN YOUR ORGANIZATION

One great benefit to communication within a department or organization is that the individuals are typically more knowledgeable about the subject matter. When it comes to facility issues, facilities management personnel speak the same language. This offers advantages in that words can be conserved and time can be spent performing work rather than discussing it.

Problems arise, however, when familiarity leads to communication being taken for granted. We may assume too much knowledge or understanding on the part of others and vice versa. Information omission causes gaps in knowledge transfer or, at times, a misunderstanding of intent which can lead to poor performance. Communicating intent along with the usual instructions can paint the bigger picture. This level of understanding confers some of the responsibility for knowledge transfer to the receiver as well as the messenger. Questions, clarifications, and verifications, especially early in a process, are all signs of healthy communications that can lead to better performance of any activity.

COMMUNICATION ACROSS ORGANIZATIONS

Non-facilities people are often, but not always, less knowledgeable of facilities related issues. This poses a real challenge when considering the need to communicate enough information to be helpful, without providing too much information that buries the important issues. Information overload can be as damaging as information omission when it comes to misunderstanding and poor performance.

Likewise, the communication of intent is critical here. "Why" something is being done can be more important than exactly "what" is being done. Understanding intent can trigger a desire to want to expand one's knowledge and actually learn more. Communication is really enhanced when both parties are truly interested. Watch out for the major trap of assuming that sufficient knowledge is being transferred simply because the other party is not asking a lot of questions. Pay attention to what is conspicuously not being said. Initiate the questioning period if necessary.

Professional relationships are like all relationships—good communication is important to long-term health. So, as you continue to make progress on all of your priorities, strive to improve your communication processes as well. This will be time well spent.

Joe Whitefield is executive director of facilities services at Middle Tennessee University, Murfreesboro, TN. He can be reached at *joe.whitefield@mtsu.edu.*

The Value of Sustainability Communications Strategies in Achieving Facilities Goals

By David Bookhart and Ed Kirk

When sustainability efforts were gaining ground on college campuses, many thought sustainability was simply the traditional environmental movement with a new name. Clearly there are similarities; both are embedded in a strong foundation of environmental stewardship, and both have the zeal and enthusiasm of the youth as they look toward making the world a better place.

However, while the environmental movement was largely ecology based – looking at ecosystems and natural environments – the sustainability movement is management and efficiency based. While the environmental movement focused on reducing impacts through conservation and sacrifice, the sustainability movement focuses on maintaining healthy and productive work environments by reducing waste, not comfort. Most importantly the environmental movement focused on, well, the environment.

The sustainability movement, on the other hand, places the environment within the context of economic efficiency, health and productivity of building occupants, and pragmatic utilization of utilities and natural resources.

Because of the immediate connection with buildings, operations, and finance, sustainability programs often have strong relationships with campus facilities groups. There is a natural synergy between facilities and sustainability because of the shared goals of reducing or eliminating the waste of energy, water, resources, funding, and of the professional staff's time. From both sustainability and facilities viewpoints, waste leads to overconsumption of resources, environmental damage, occupant discomfort, and excessive costs.

With this obvious area of commonality, how best to utilize sustainability to meet facilities goals? One clear avenue stands out; taking advantage of sustainability communications strategies to achieve operational successes.

Facilities management has typically been an invisible art form, behind the scenes. Operations staffs are not accustomed to reaching out to building occupants, while sustainability staffs are trained to do exactly that. Sustainability is rooted in the concept that all members of the community have a role to play in "greening" the institution, and so the best way to get occupants involved is to engage them directly. Sustainability staff meet with building occupants and start conversations about the ways buildings work. They develop surveys and share the results and spotlight successes. They ask for opinions and provide answers and make the invisible, visible.

From a facilities point of view, there is a distinct advantage to leveraging the sustainability approach. An aggressive engagement program allows observations and new ideas to travel a two-way street back to the facilities offices. When done right, sustainability staff are able to engage building occupants in ways that provide constructive feedback.

At Johns Hopkins University all members of the sustainability staff work in concert with the plant operations staff to find ways of increasing building comfort while saving energy (and funding and environmental impacts) following the mantra that health, comfort, and safety must be maintained. Testing new technologies or efficiency cannot compromise this mantra since it is vitally important for people not to feel like they are sacrificing for sustainability.

To pass on this message, the office employs a behavioral specialist who spends a significant amount of time in buildings meeting with the occupants. She has well-developed presentations for administrative groups, conducts monthly meetings with green "champions," and organizes trainings with building operational staff to ensure that efficiency goals are being met. The office also has a data analyst who concentrates on metrics so that building occupants can see how their actions affect monthly consumption totals.

Combining the monthly energy, water, and recycling metrics with behavior change efforts helps bring to life the idea that buildings and campuses are dynamic and ever-changing. Finally, as a university dedicated to research and teaching, the office takes advantage of the enthusiasm and energy of students to help shed light on tricky facilities problems. An outreach coordinator, focusing on student actions and coordinating work teams, can provide clear and tangible benefits to facilities efforts.

At Johns Hopkins, sustainability staff were able to produce results, such as:

- **Scheduling** – with a combination of surveys and individual questionnaires, the behavioral specialist was able to determine a more accurate building schedule that helped cut an average of three hours per day off of "occupied" temperature controls.
- **Messaging** – by focusing on established marketing strategies, the outreach coordinator was able to increase recycling and composting yields by devising effective messaging.
- **Changing behaviors** – by providing the visibility on building utility consumption, the data analyst has shown building occupants how their individual actions affect the university's sustainability (and utility reduction) goals.
- **Legwork and research** – Sustainability coordinators worked with volunteers and students to survey overlooked items such as elevator lights, location and placement of recycling bins, and flow rates of restroom fixtures.

The expanded engagement with building occupants provides comprehensive feedback to the facilities managers regarding how individual buildings operate. Building occupants tend to give information to the people they know and see regularly – the sustainability engagement staff. Where occupants would have complained in the past, now they give this information to the sustainability staff.

In new construction and retrofit projects, the emphasis on sustainability helps focus on the long-term needs of building occupants, minimizing operations and maintenance, and reducing waste. The office reaches out directly to design consultants and commissioning agents to ensure energy efficient initiatives are clearly defined, robustly designed and are more maintainable for operations staff. A sustainable approach to building systems is one that achieves the desired comfort levels, and health and safety requirements, and is less costly and simpler to operate. We review design concepts earlier in the process and communicate more thoughtfully and proactively with the wide range of stakeholders.

We have learned that this process may take more time within institutional environments where consensus is desired, but evidence suggests that resource efficient buildings are not more costly to design, build, or operate and are a great investment in the future of our campus.

Davis Bookhart is director, office of sustainability, at Johns Hopkins University in Baltimore MD, and can be reached at *dbookhart@jhu.edu*. Ed Kirk is a university energy engineer in the office of sustainability at Johns Hopkins University. He can be reached at *ekirk3@jhu.edu*. This is their first article for *Facilities Manager*. Haley & Aldrich assists with the production of the Power Tools column.

Book Review Editor: Theodore J. Weidner, Ph.D., P.E., AIA

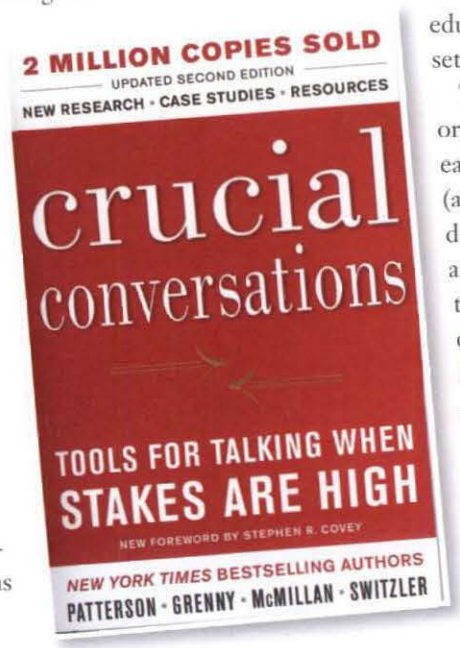
It's a new year, but the same

old problems persist. Why does this keep happening? Maybe it keeps happening because you haven't had the opportunity to read either of the books reviewed in this issue. While I don't assume I have all the answers, or can find them all in books reviewed in this column, I hope to find some solutions that will make your year more successful. Both these books hit home with me.

CRUCIAL CONVERSATIONS TOOLS FOR TALKING WHEN STAKES ARE HIGH, 2ND EDITION

Patterson, Kerry, et al, McGraw-Hill, New York, NY, 2011, 288 pages, softcover, $18.00; Kindle, $9.99.

It seems as though no week goes by when I don't end up having some kind of discussion about what I call an "elephant in the room" subject. What do I mean by that? The elephant is the big issue that too many people are afraid to mention either because it frightens them or they don't want to know the answer.



The sad thing is that avoiding the big issues often ends up causing bigger, more painful problems down the road. When you're dealing with $100 million projects or a 50-year building, a small issue can become big very quickly. So the best managers I've worked with have developed the ability to point out the big, unspoken issues. They bring them to the table for a respectful discussion, and to ensure all the problems have been addressed. The managers who have to be checked and rechecked don't ensure that all the issues have been addressed. They are the ones with problem projects or buildings; and they're often unhappy in their job.

What techniques do the good managers have over others? What should be done to make sure the tough discussions are held and not avoided or are held in a respectful manner so cool heads can make a decision rather than a hurried, rash decision? The premise of *Crucial Conversations* is that anyone can learn to address a difficult topic and ensure a respectful discussion. While much of the book focuses on interpersonal relationships, husband-wife or boss-employee issues, the techniques and styles are applicable to group settings that are similar to may higher education facility settings.

The book is organized such that each chapter (after the introductory chapter) addresses a proven technique to focus on the crucial issue. Examples are provided and there are a few individual stories from people who have received intensive training in *Crucial Conversations*. There's also a summary and reminder of a mnemonic the authors have developed describing the traits of each technique. As is the case with many of the books I've been reading lately, there are online examples including video companions to the text, which are helpful to practice your technique and to see some of the non-verbal cues that may be difficult to perceive in the text.

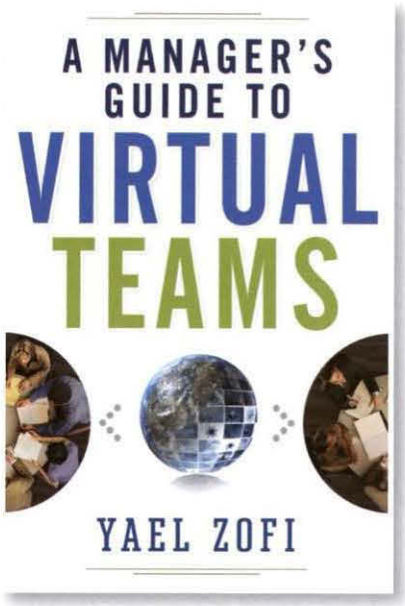
But what are the *Crucial Conversations*? There's really the same thing as Covey's *seek to understand* habit; ensuring that all parties understand the perspective of each other allowing a mutually agreeable solution. While there may not be a consensus solution for every situation, it's guaranteed that a consensus solution will not be found if the *Crucial Conversations* aren't used.

A MANAGER'S GUIDE TO VIRTUAL TEAMS

Zofi, Yael, AMACOM, New York, NY, 2012, 256 pages, hardcover, $27.95.

We all know about teams and we think we understand what virtual means. But what are virtual teams? One definition, found in *A Manager's Guide to Virtual Teams*, defines a virtual team (VT) as "A group of people who get together to solve a problem without a solid line reporting relationship to solve a problem." From my perspective, this definition means that every campus team that is formed across traditional campus silos is a virtual team; almost everything we do at my campus would be considered a virtual team. Fortunately, there are several other definitions provided and the author, Yael Zofi, moves far beyond reporting relationships to physical and logistical separation to define a VT.

But what is different between a VT and a traditional team? When describing a traditional team and the phases a team goes through there's Forming, Storming, Norming, and Transforming; the four phases that attempt to describe how a team has ups and downs before becoming productive. Certainly, these phases exist also in a VT but there are challenges beyond getting through the "storming" phase. There are issues of non-verbal communication cues or time zone problems. Don't forget issues of



accountability and the anonymity available when concealed by a telephone. How is a manager who needs a team to produce an outcome, deal with a disparate group of people (hopefully experts) who may not be fully committed?

Zofi attempts to quantify the traits, metrics, and oversight of successful virtual teams. This a difficult but essential goal as the world shrinks and we get more of the younger generation into our work groups who are accustomed to accomplishing tasks with teams and being connected to others. There are the usual case studies and examples of successful and unsuccessful VTs. Discussion about what worked, what didn't, and what needed to be done to resolve problems. There are rules to develop and maintain the trust of the team and requirements of management to ensure the success of the VT. Many are common sense and many are applicable to teams that may be more typical of higher education work groups.

While I don't believe many higher education organizations have a need for virtual teams, there are the exceptions of campuses that have multiple branches in the state, across the country, or globe. But the concepts of how to get people together to focus on a common goal, when they have many personal and professional competing interests, is beneficial to many more people than one would expect. Overcoming outside influences, the belief that a person can successfully multi-task, and the interruptions we face in our over-connected world, are important to address and solve with the good advice made in this book. Consider reading this book before tackling your next cross-campus committee and see if it doesn't help the team perform better.

Ted Weidner is assistant vice chancellor of facilities management & planning at the University of Nebraska–Lincoln; he can be reached at *tweidner2@unlnotes.unl.edu*.

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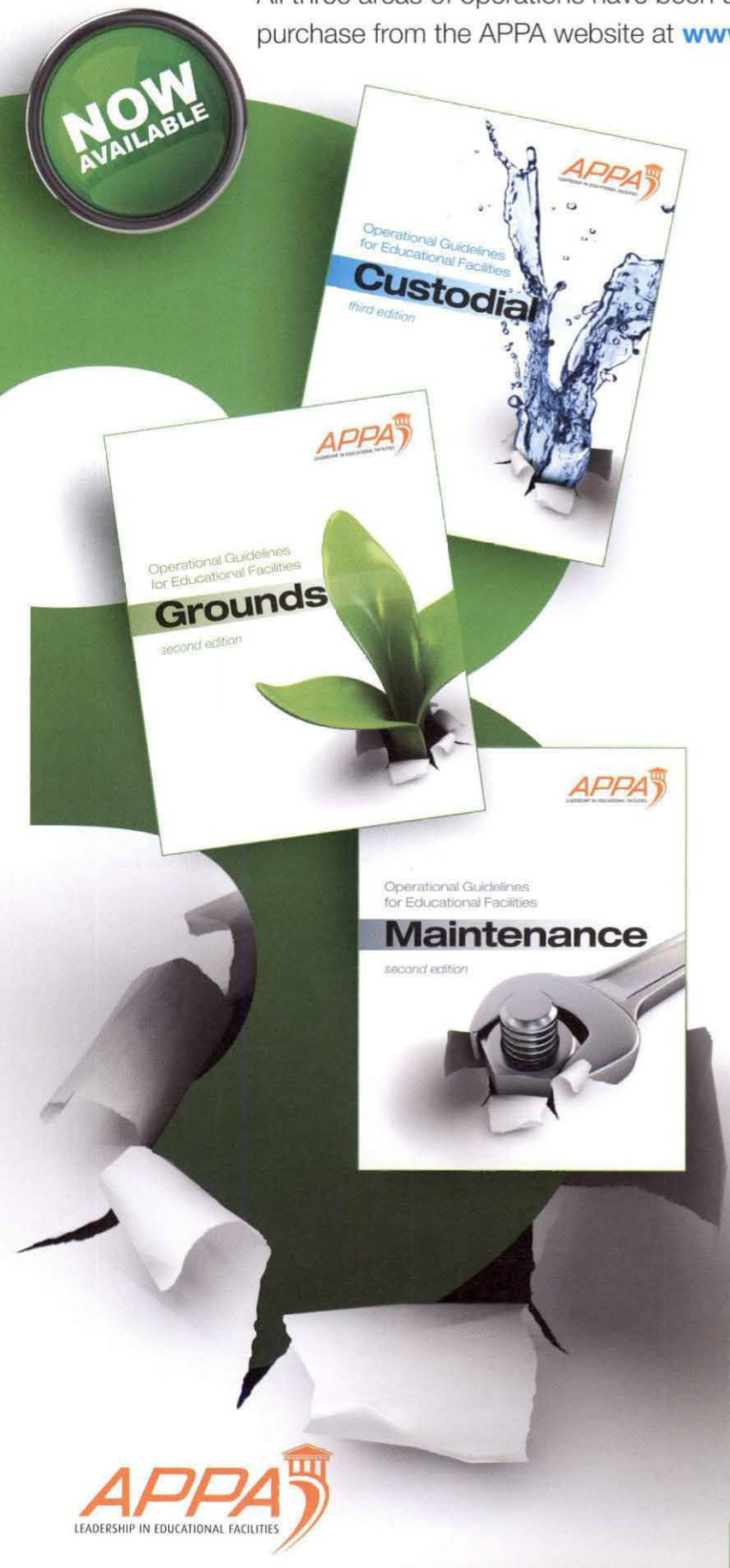

Editor-in-Chief: Alan S. Bigger, APPA Fellow

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Task Force Chair: Tom Becker, Philadelphia University

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Compiled by Gerry Van Treeck

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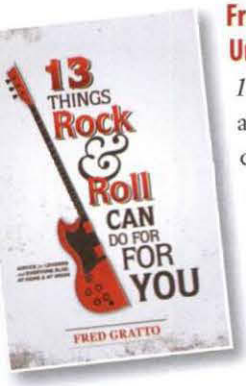
Bacharach Inc., a USA manufacturer serving the HVAC/R industry is pleased to announce the release of new Portable Gas Monitors available in two models, the Comfort Chek™500 and the IEQ Chek™ Series. The Comfort Chek™500 is a lightweight handheld Carbon Dioxide (CO2) air quality monitor equipped with a stable (CO2) IR sensor that measures and displays 0-5,000 ppm, in addition to temperature and relative humidity sensors. The Comfort Chek™500 is economical and easy to use and includes features such as long run time (up to 24 hours), datalogging (up to 26,000 data points) and a USB output for remote data download with IQ Chek™ Datalogging Management Software. For greater detail and additional information on IEQ Chek™ visit Bacharach Inc. at *www.mybacharach.com*.



Fred Gratto, assistant director of facilities, University of Florida, has written a new book *13 Things Rock and Roll Can Do for You*. Rock and Roll is a huge part of our lives. It accompanied us on first dates, got us through college and introduced us to bad hairstyles. But it has more to offer than good times and great tunes. Buried in the lines of many rock songs are the greatest truths in life. Rock and Roll offers wisdom to help navigate life's most complicated issues. Explore them in *13 Things Rock and Roll Can Do For You*. For additional details visit Amazon at *www.amazon.com*.

Action Floor Systems Action Floor Systems offers the Action ChannelFlex Ultra, that provides uniform shock absorption and ball bounce. By incorporating channel components into the subfloor structure itself, the ChannelFlex Ultra system ensures uniformity from panel to panel, something that sectional channel systems don't deliver. The subfloor system also incorporates an anchoring retention design that eliminates the potential for galvanic action. The unique anchoring system limits anchor failure and prevents materials from binding, dramatically reducing or eliminating annoying squeaks. Combined with Action's ProAction Natural Rubber pads, this system delivers outstanding performance. Channel Flex Ultra meets or exceeds all domestic and international performance requirements for EN, ASTM, PUR, and DIN certifications. For more information, please visit Action Floor Systems at *www.actionfloors.com*.

Pro-Tech introduces five new Sno Broom attachments for skid steers and compact tractors. Sno Brooms minimize the potential for damaging surfaces and they excel at removing snow against curbs and walls as well as other hard to reach areas. Skid Steer models are available in 60, 72, and 84 inch broom widths

and come with a universal coupler for attaching to equipment with various hydraulic flow ratings. Additionally they can be hydraulically angled 30 degrees left or right. For in depth information please contact Pro-Tech at *www.protechcorp.com*.

Rite-Hite Fan's Rite-Hite Fan's new Fan-Commander™ Control Station lets users control up to 18 Revolution® HVLS fans, maximizing the energy savings and comfort they deliver. The new touch-screen Fan-Commander ™ control station is intuitive and easily programmed adjusting the speed of Revolution HVLS fans to match winter and summer conditions. During winter, the correct fan speed produces even temperatures from floor to ceiling for proven energy savings and increased employee comfort. An automatic and accurately controlled fan speed in summer results in a cool breeze when it's needed most. With the Fan-Commander, users can optimize the year-round performance of strategically located Revolution HVLS fans throughout a single facility, maximizing the energy savings and comfort they deliver. For further information visit Rite-Hite Fan at *www.ritehitefans.com*.

New Products listings are provided by the manufacturers and suppliers and selected by the editors for variety and innovation. For more information or to submit a New Products listing, e-mail Gerry Van Treeck at *gvtgvt@earthlink.net*.

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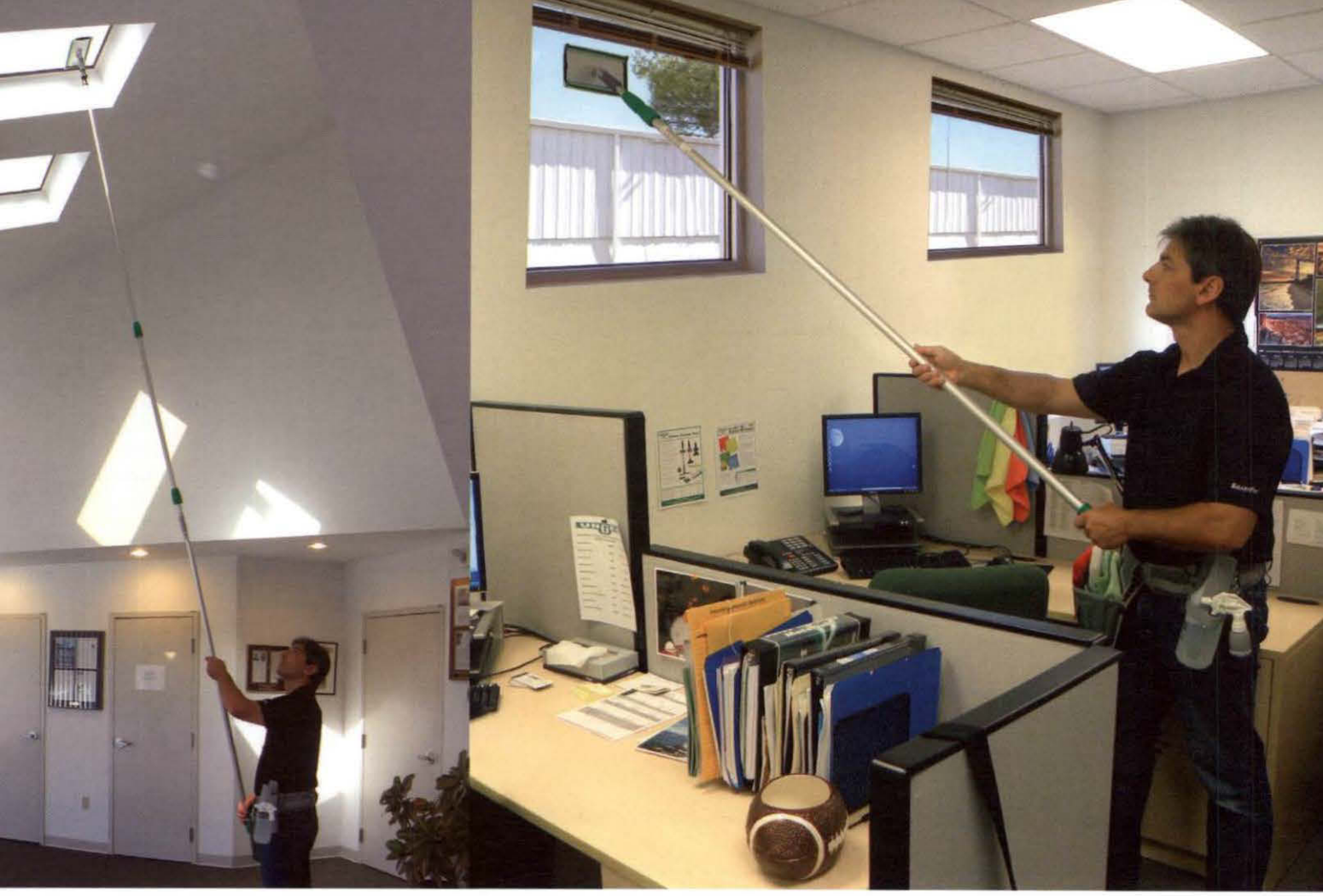

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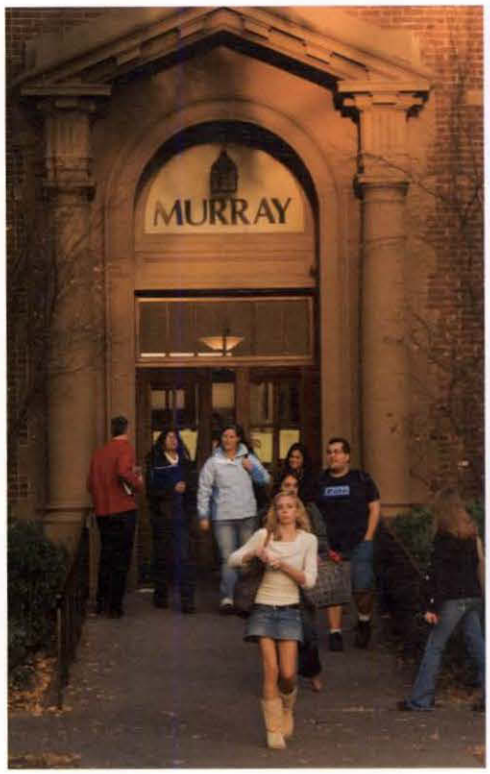

Rutgers is making recycling a part of everyday campus life.

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- Achieved a 67% recycling material diversion rate, toward a goal of 85% by 2015
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- Implemented single-stream recycling. All recyclables can be mixed together – no sorting needed
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- Won the EPA'S "WasteWise Partner of the Year" (2007). Rutgers diverted 15,800 tons of material, saving $840,000 in landfill costs

Let's talk about sustainability for your campus. Call Paul Pistono, Vice President of Public Sector Solutions, at 1 888 558 6390. Or visit wm.com/campus.

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