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MAY/JUN 2013

SUSTAINING LEADERSHIP

INSIDE

FM's Role in Organizational Sustainability

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A Sustainability Love Story

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SUSTAINING LEADERSHIP

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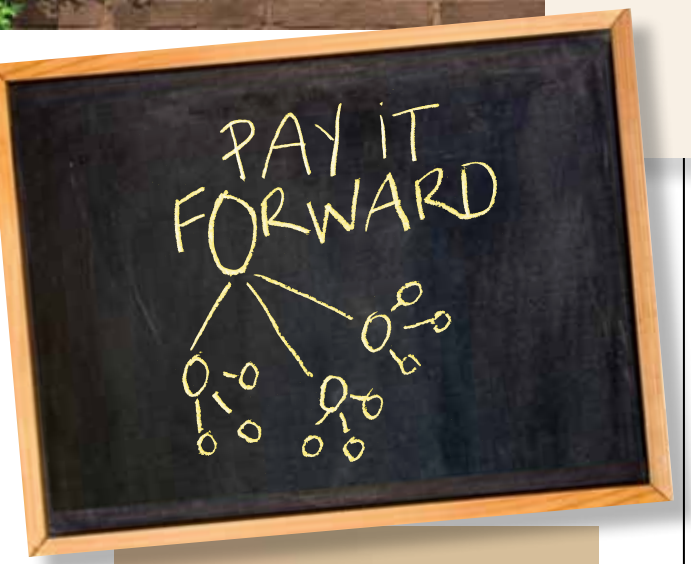
CFaR | Center for Facilities Research



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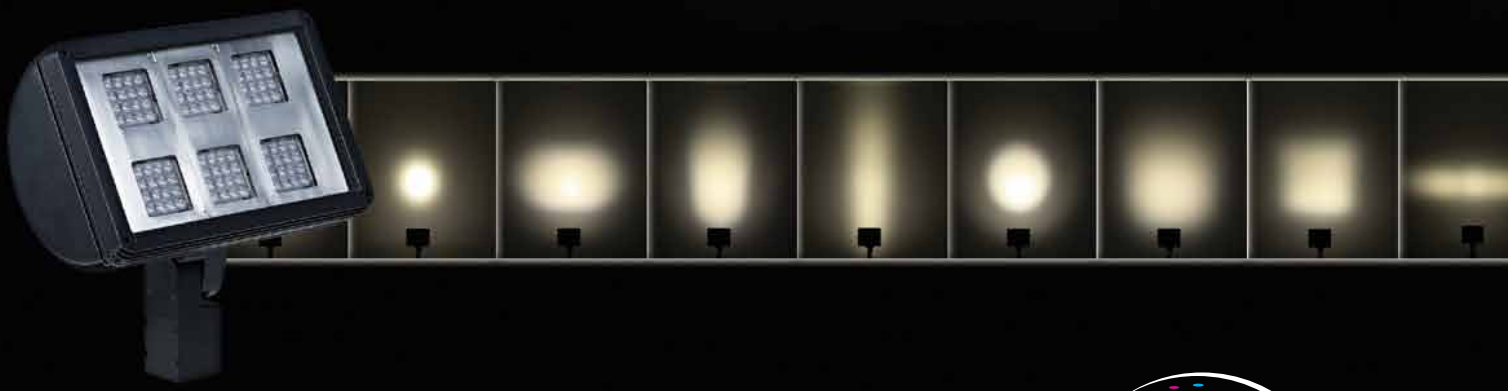

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THOUGHT LEADERS SYMPOSIUM FOCUSES ON COST OF EDUCATION

On Wednesday, April 10, APPA convened its 2013 Thought Leaders symposium in Charleston, South Carolina. Forty-three college presidents, provosts, business officers, facilities officers, other campus administrators, consultants, and APPA staff came together to participate in the eighth annual symposium in APPA's Thought Leaders Series. The symposium was hosted by **Jack K. Colby**, APPA Fellow and Past APPA President, North Carolina State University, and **Lander Medlin**, APPA's executive vice president.

The college and university presidents participating were the following:

- **John M. Dunn**, Western Michigan University
- **Sue Henderson**, New Jersey City University (returning participant)
- **Robert W. Pearigen**, Millsaps College
- **Earl H. Potter III**, St. Cloud State University (returning participant)

Thanks also to the provosts in attendance:

- **Johannes Britz**, University of Wisconsin Milwaukee
- **James M. Klein**, Southern Oregon University
- **Sharon L. Vasquez**, University of Hartford

Thought Leaders is a program of APPA's Center for Facilities Research. The primary topic of discussion for the 2013 symposium, expertly facilitated for the seventh time by **Larry Goldstein** of Campus Strategies, was the daunting issue of the rising cost of higher education. TLS participants heard short presentations by subject matter experts who each provided background data and provocative concepts for the group to consider.

APPA appreciates the preparation and participation of the following subject matter experts:

- **Brenda N. Albright**, Brenda Albright Consulting (returning participant)
- **Kevin MacNaughton**, North Carolina State University
- **John Walda**, National Association of College and University Business Officers

An initial executive summary of the research findings from the 2013 Thought Leaders symposium will be released to the attendees of APPA's Senior Facility Officers Summit, which will be held August 1 in Minneapolis, Minnesota in advance of the August 2-4 APPA 2013 annual conference.

As we have done in previous years, we will publish the final Thought Leaders report as a downloadable PDF via the APPA bookstore in mid-September. In addition, we will excerpt the report in the September/October and November/December issues of *Facilities Manager*.

APPA thanks all the participants in the 2013 Thought Leaders symposium, and we are grateful to our TLS sponsors, DTZ, a UGL company, and Jacobs. Be watching for additional educational programming, research, and publications stemming from our work with TLS.

Coming in July/August 2013

- Improving Campus Service Using FPI's Performance Measures
- Canadian Universities and the FPI
- International Standards and the Public Sector

FACILITIES manager

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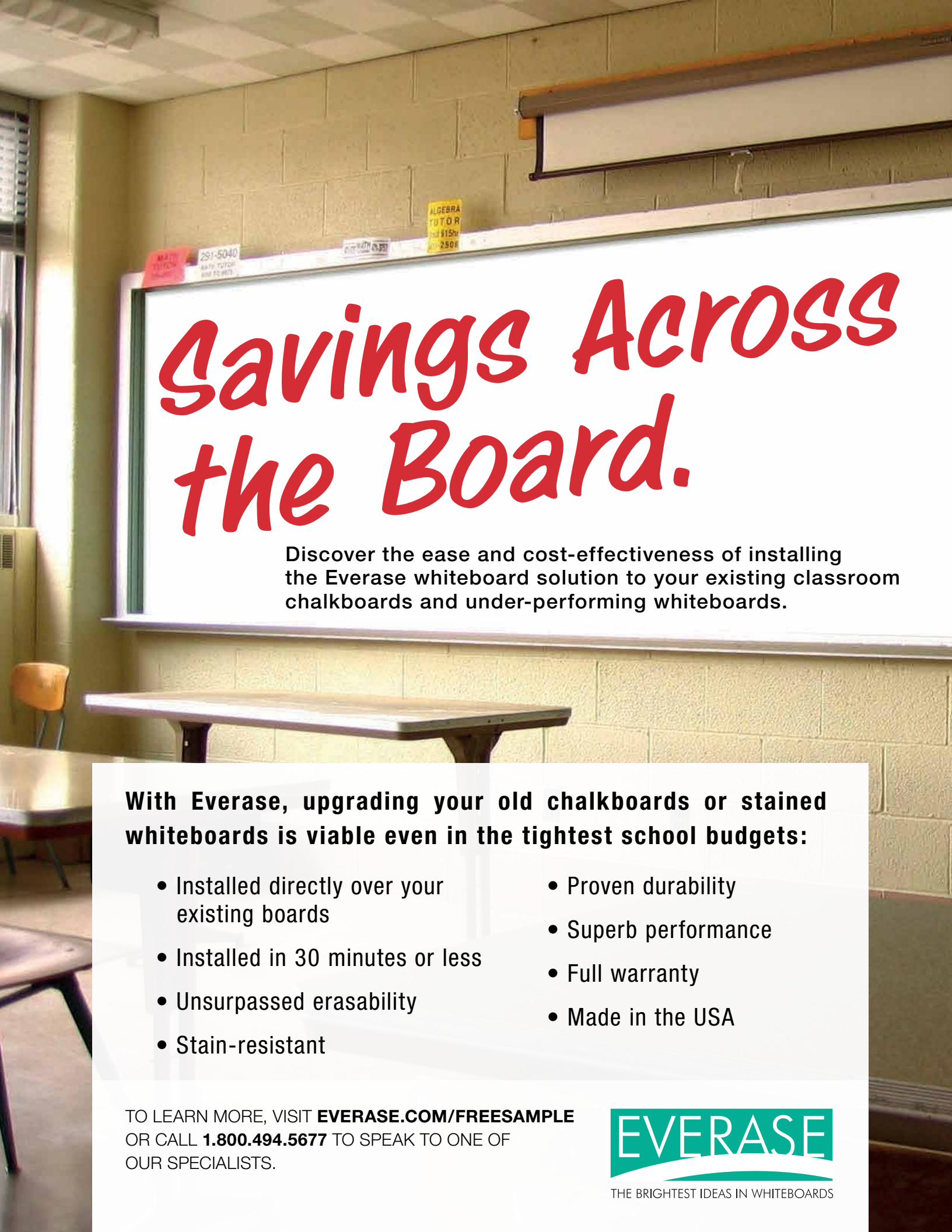
About APPA

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*.



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facilities digest

By Anita Dosik

2013-2014 OFFICERS

We are pleased to announce the newly elected officers for APPA's 2013-2014 administrative year:

PRESIDENT-ELECT:

- Randolph Hare, Washington and Lee University

VICE PRESIDENT FOR PROFESSIONAL DEVELOPMENT:

- Chuck Scott, Illinois State University

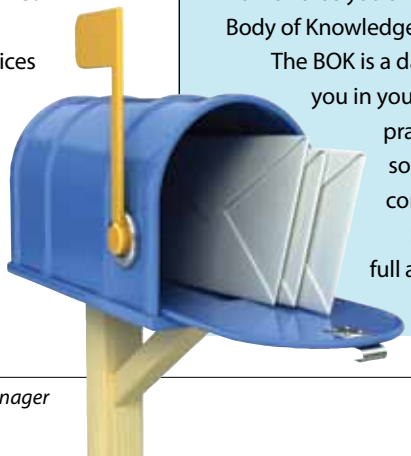
The successful candidates will take office at the APPA 2013 conference in Minneapolis, Minnesota in August 2013.

Many thanks to the Tally Committee for counting and verifying the votes:

- H. Allen Stearns, Chair, member emeritus
- Allan D. Guggolz, member emeritus

RENEW YOUR APPA MEMBERSHIP TODAY

The APPA 2013-14 fiscal year began on April 1, 2013, and runs through March 31, 2014. Renewal notices have been mailed to all member and business partner institution primary representatives. You may pay online and manage your membership by logging into myAPPA, or pay by check via mail. THANK YOU to those who have already renewed your APPA membership. If you haven't paid yet, watch for invoices and please pay promptly in order to retain the many benefits of membership. Remember that the online BOK (Body of Knowledge) is now an automatic benefit for *all* APPA member institutions.



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SFO SUMMIT

APPA'S ANNUAL CONFERENCE
August 2-4, 2013
Hyatt Regency
Minneapolis, MN

APPA U – INSTITUTE FOR FACILITIES MANAGEMENT AND LEADERSHIP ACADEMY
September 8-12, 2013
Harbor Beach Resort & Spa
Fort Lauderdale, FL

APPA U

IN CASE YOU HAVEN'T HEARD...

APPA's online Body of Knowledge (BOK) is now an automatic benefit of membership. This means that in addition to its many advantages in terms of helping you be a better leader and helping your organization perform its best, APPA membership now affords you and your institution full access to the digital Body of Knowledge (BOK) as part of your membership dues.

BOK
Body of Knowledge

The BOK is a database of 60+ chapters that will assist you in your search for professional guidance, best practices, policies and procedures, and solutions to your leading facilities management challenges. Peer-reviewed and comprehensive, the BOK contains the knowledge and insight you need to lead.

If you haven't yet done so, please renew your membership promptly and gain full access to this powerful tool!

ACCESS THE NEW WEBINARS ON APPA'S ENERGY AND SUSTAINABILITY ASSESSMENT TOOL

A new series of four online webinars is available to help you learn more about APPA's Energy and Sustainability Assessment Tool (ESAT). ESAT helps your institution get the data and direction it needs to chart a course to sustainability. It is a part of APPA's Facilities Performance Indicators (FPI), a proven APPA tool that assesses and benchmarks critical areas related to the construction, operation, and maintenance of institutional facilities. View the ESAT webinars to learn how to complete the assessment—and get the most out of doing so. You can access the ESAT webinars at *http://www.appa.org/research/fpi/webinar.cfm*.

CONGRATULATIONS TO ANOTHER ACADEMY GRADUATE

APPA congratulates Billy Bryant of Washington and Lee University who recently completed his course work to become a graduate of the Leadership Academy.

EVENTS

APPA EVENTS

Aug 1, 2013 **SFO Summit,** *Minneapolis, MN*

Aug 1, 2013 **Emerging Professionals Summit,** *Minneapolis, MN*

Aug 2-4, 2013 **APPA 2013: Annual Conference & Exhibition,** *Minneapolis, MN*

Sep 8-12, 2013 **APPA U: Institute for Facilities Management and Leadership Academy,** *Fort Lauderdale, FL*

Oct 15-18, 2013 **ACUHO-I/APPA Housing Facilities Conference,** *Providence, RI*

APPA CHAPTER EVENTS

May 13-14, 2013 **NCAPPA 2013 Conference,** *Greensboro, NC*

May 14-15, 2013 **TNAPPA 2013 Conference,** *Martin, TN*

May 15-17, 2013 **FLAPPA 2013 Conference,** *Sarasota, FL*

May 25-29, 2013 **GAPPA 2013 Conference,** *Jekyll Island, GA*

Jun 27-28, 2013 **MD/DCAPPA 2013 Conference,** *McHenry, MD*

APPA 2013 REGIONAL MEETINGS

Sep 14-18, 2013 **PCAPPA,** *San Diego, CA*

Sep 23-25, 2013 **RMA,** *Colorado Springs, CO*

Sep 29-Oct 2, 2013 **ERAPPA,** *Rochester, NY*

Sep 29-Oct 2, 2013 **CAPPA,** *Galveston, TX*

Oct 12-15, 2013 **SRAPPA,** *Lake Lanier Islands, GA*

Oct 27-31, 2013 **MAPPA,** *Grand Rapids, MI*

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

APPA CENTENNIAL PROJECT

The year 2014 will mark APPA's 100th anniversary. This summer APPA officially kicks off a year-long celebration—starting with the APPA 2013 Annual Conference that takes place August 2-4 in Minneapolis. Plans are underway to commemorate our centennial year. You may contribute to the celebration via the APPA Centennial Project Site at *http://100years.appa.org/*.

The Centennial Project is an opportunity for all APPA members to share their memories, to include photos, videos, and other images, on APPA's image bank. APPA will use this material to commemorate our anniversary on the APPA website; in *Facilities Manager* magazine; in interactive, online publications; commemorative videos; and other sources. We encourage every member to participate. Share with us your "APPA Journey." Let us know how and why you became part of our profession. Share photos and videos of your facilities team and yourself. Send us images of special moments with colleagues and friends at regional and chapter events. Tell us what made those times memorable for you. Use the APPA Centennial Project website to upload photos of your campus buildings from yesteryear and today.

We look forward to your participation in the Centennial Project. And we know you will gain a lot by hearing about the journeys of the many other individuals and organizations that have helped APPA—and our members—thrive 100 years!

APPA CONGRATULATES CEFP & EFP RECIPIENTS

The following professionals have successfully completed the requirements for APPA's CEFP and EFP Credentials between January 4 and April 1, 2013. Congratulations on their personal accomplishments!

CEFP RECIPIENTS

Amr Abdel-Azim, *Michigan State University*
Robert Bahr, *Sodexo/Florida*
Helen Bailey, *University of North Texas*
Lowell Bromander, *Hamline University*
Robert Casagrande, *SSC Service Solutions @ Texas A&M*
Don Castello, *Lewis University*
Leopoldo Cervantes, *Texas A&M University/ San Antonio*
Ken Dehkes, *Hamline University*
Edmond Dubois, *University of Colorado/Boulder*
Walter Dudley, *Georgia College & State University*
Hollis Dyer, *Texas Christian University*
Lynn Fletcher, *University of Colorado/Boulder*
Brian Guns, *University of North Carolina/Charlotte*
Michael Hodnefield, *University of Regina*
Susan Hopper, *Michigan State University*
Nancy Hurt, *Colorado State University Research Foundation*
Kathy Junior, *University of Regina*
Christopher Kopach, *University of Arizona*
Marshall Lasswell, *Texas A&M University/ San Antonio*
Wissam Mansour, *Lebanese American University*
Mark Manzutto, *University of New Mexico*
Shane McKechney, *University of Regina*
Daniel Murrell, *University of Nebraska Medical Center*
Bob Notary, *University of New Mexico*
Kenneth Ogawa, *University of Pennsylvania/ Philadelphia*
Mark Patton, *Sodexo Education Facilities*
Victor Pesiri, *Viewpoint School*
Tony Putnam, *Clemson University*
Shelton Riley, *Texas Christian University*
Luis Rocha, *University of Arizona*
Peter Strazdas, *Western Michigan University*
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Christopher Vera, *Texas A&M University/ Kingsville*
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John Wood, *University of Tulsa*
Bernard Zertuche, *Alamo Colleges*

EFP RECIPIENTS

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Guillermo Felix, *University of Arizona*
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Aaron Scherpereel, *Texas Tech University Health Sciences Center*
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Greg Vaughn, *Miami University*
Robert Wall, *University of Arkansas/Pine Bluff*
Thomas Webb, *University of Arizona*
William West, *University of New Mexico*
Kyle Williams, *Brigham Young University/ Idaho*
Anthony Zaino, *University of Arizona*
Jeffrey Zimmerman, *The Arthur Jackson Company*

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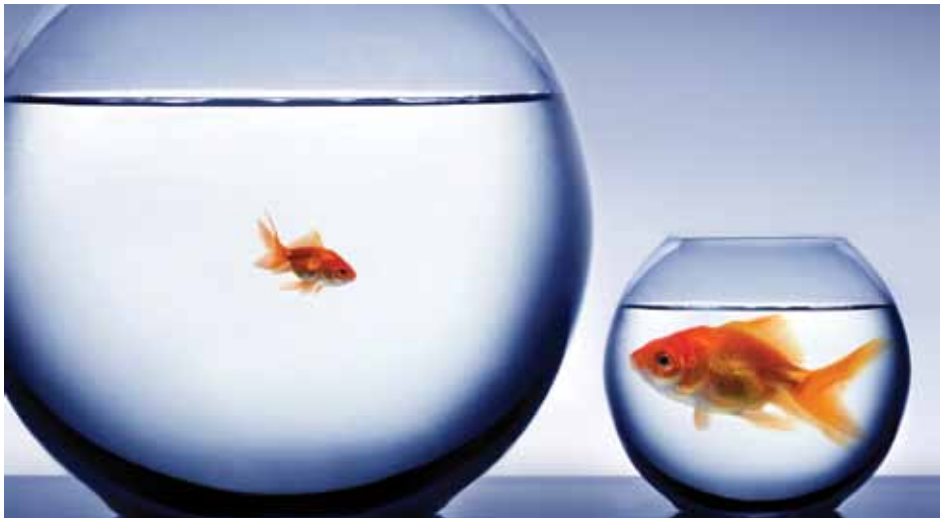
Why Space? Why Now?

By E. Lander Medlin



Higher education has proven to be a key factor in spurring innovation and sparking our global competitiveness. Higher education is critical to fueling a country's economic engine. That most assuredly will not happen if we don't find solutions to the three big interrelated problems of cost, access, and quality—the "iron triangle." With student loan debt approaching a trillion dollars, the cost of a degree up 115 percent since 1990, fewer students graduating from a four-year institution in six years, and employers in need of college-educated workers, these problems are real, yet remain vexing. However, they deserve our best efforts.

WHY SPACE, WHY NOW?

No other issue has such potential to transform an institution's costs than that of the policies related to effective space management and utilization. Herman A. Berliner, provost of Hofstra University, said, "As all of us look for economies that will not adversely impact the quality of education, efficient utilization of space should not be left out of the discussion." Especially since the average space utilization rate is 40 to 50 percent; buildings operated 24/7 "just in case"; classrooms vacant on Fridays and most evenings; and office/lab allocations left unreviewed for decades.

Frankly, we know that effective space management can positively impact an institution financially, its productivity and sustainability. Keeping in mind, the *most* sustainable building is the one NEVER built! Most of the issues and challenges confronting higher education today have ramifications for space and cannot and should not be ignored. We do so at our own peril.

Recognize that colleges and universities are intensely focused on the allocation of their endowment portfolios—for good reason. However, we need to be just as focused on the allocation of our space portfolios. In fact, the current replacement value (CRV) of our institutions' buildings and utility infrastructure is two to three times that of our collective endowment investments! Therefore, the attitude needs to be:

- *Space is valuable* – representing a vast long-term investment;
- *Space is essential* – without which higher education could not operate (even with MOOCs);
- *Space is powerful* – a tool to accomplish the institution's goals.

The benefits are numerous:

- Increased productivity and efficiency
- Improved student services
- Reduced costs
- Greater equity
- Improved sustainability

CONFLICT ON CAMPUS

Campus space is an asset and a burden; a value and a cost; quantitative in terms of dollars and qualitative in terms of its intrinsic sense of place for those who engage in it. Yet, few institutional battles can be as intense as those regarding space. Faculty and staff will argue over money; they will fight, tooth and nail, over space.

Despite this potential for conflict on campus, higher education leaders must recognize the value and cost of their space and take steps to better manage it. The beliefs, issues, and attitudes on the part of faculty, staff, and campus administrators can be a barrier, a real deterrent in preventing effective space management on many college and university campuses:

- ***Space is expensive.*** Both new construction (up 67 percent since 1997)

and operations costs (up half as much) place an increasing burden on college and university budgets.

- ***Space is in demand.*** Demand is expected to grow in the next few decades with some 23 million students crowding U.S. colleges and universities by the end of the decade.
- ***Space is underutilized.*** Used or not, space costs money—it's an unsustainable business model.
- ***Space is poorly measured.*** When it comes to the quality, functionality, and usage of actual space, the data has serious limitations. Without data…space management is strictly politics.
- ***Space is poorly managed.*** Governance policies are often weak, ineffective, and highly political or "allocation by politics" versus strategic need.
- ***Space is "free."*** That's the attitude! Space has inherent costs to the institution, no matter who bears the expense.
- ***Space doesn't work.*** Since half the buildings were built in the 1960s and '70s, poor design quality with little flexibility renders some of them practically useless.
- ***Space can't be ignored.*** Institutions need to maximize every resource available in these economically challenged times.

We need to move from viewing "space as a possession" to "space as an institutional asset" that deserves senior management attention and enterprise-wide policies. Space requires strategic thinking, hence a new vision for effective space management emphasizing the true value of space. To make better use of space, the focus should be on:

- Establishing metrics to better measure and allocate space.
- Developing effective policies, decision-making processes, and standards.
- Creating effective organizational governance structures.
- Implementing incentives to encourage smart space management.
- Designing spaces that are easy to manage.

THE ONLINE EDUCATION PLATFORM

If this argument isn't enough, we need to recognize that MOOCs (Massive Open Online Courses) are most definitely disrupting the delivery system of higher education. New technologies are significantly lowering the costs and slowly improving the quality of the online education platform. And, most traditional colleges and universities are offering classes, even degrees, online.

> Demand for new skills has reached an all-time high. People on every continent have realized that to thrive in the modern economy, they need to be able to think, reason, code and calculate at higher levels than before. (*Time* magazine article "Reinventing College," October 29, 2012, by Amanda Ripley)

At a time when the American public, in particular, is questioning the value and cost of a college degree, most colleges and universities are experimenting with more online deliveries and additional ways to enhance and enrich the campus experience. MOOCs aren't there yet for the masses, but they aren't going away either. MOOCs are a reality and gaining momentum. Arguably, it's not about online versus bricks and mortar; it's about an enriched blended environment that takes advantage of both venues. In the same *Time* magazine article, the author illuminates online offerings at their best and their worst.

> Ideally, Udacity and other MOOC providers will help strip away all the distractions of higher education—the brand, the price and the facilities—and remind all of us that education is about learning. In addition to putting downward pressure on student costs, it would be nice if MOOCs put upward pressure on teaching quality.

The author closed with this take on an international MOOC student's experience:

> Niazi loved MOOCs more than her own school . . . But when I asked her if she would get her degree from Udacity University, if such a thing were possible, she demurred. She had a dream, and it was made of bricks. "I would still want to go to Oxford or Stanford," she said. "I would love to really meet my teachers in person and learn with the whole class and made friends—instead of being there in spirit."

EMBRACING THE WINDS OF CHANGE

Clearly, the winds of change are upon us in ways many could not even fathom a dozen years ago. Can the current system remain in place? Should space, once allocated, generally become a "fixed" asset? Can higher education afford the luxury of convenience and tradition? We need a cultural transformation to make better use of space on campus where:

- People accept less space for better space.
- People share space with assurances they can get it back when needed.
- Facilities staff embraces a proactive, consultative role.
- Data-driven resource allocation practices are utilized.

An approach that is far more systematic and enterprise-wide. As Frances Mueller (University of Michigan) aptly stated, "Space is a critical resource, just like your institution's financial resources; it has to be managed effectively and used efficiently. It is an asset that you need to allocate in order to support short- and long-term priorities."

It's Your Choice! Remember, "The future is won by those creating the future . . . and not the ones trying to maintain the status quo."

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

Professional Affairs Committee

By David A. Cain

It is my honor and pleasure to inform the APPA membership of some of the major highlights of the Professional Affairs Committee. I am currently in my second year of a three-year term as vice president. It has been an incredible amount of work, but I have also gained a great deal of personal satisfaction from working with the APPA staff, Executive Committee, APPA Board, and the membership at large.

The following summary provides a brief outline of the efforts, activities, and outcomes provided to the APPA membership by the Professional Affairs Committee. Listed directly below are the four critical committee groups that this office is responsible for:

1. Professional Affairs Committee, APPA's Institutional awards (PAC)
2. Awards and Recognition APPA's Individual awards (A&R)
3. Certification and Credentialing Program (EFP and CEFP) Board Liaison, and
4. Emerging Facilities Professional Group (EP)

This work couldn't be accomplished without the excellent support from the APPA staff liaisons Christina Hills (PAC, A&R, and Certification), and Steve Glazner (Emerging Professionals) as well as the entire APPA staff that allowed us to bring you outstanding recognition and award programs.

PROCESSIONAL AFFAIRS COMMITTEE (PAC)

A major goal of Professional Affairs has been to create the entire award process so it is more transparent and simple to use for educational applicants/institutions and to create an all-electronic version of the review and award process.

Many thanks to all the regional committee members listed below. These represent each of the six APPA regions within Professional Affairs and contribute their time, knowledge, experience, and dedication to APPA to deliver these awards and programs. These are dedicated individuals and I have truly enjoyed working with each and every one of them.

2013 PAC Members

CAPPA: David Stapleton, *University of Central Oklahoma*
ERAPPA: Leon D. MacLellan, *St. Francis Xavier University*
MAPPA: Jerry Carlson, *Butler University*
PCAPPA: Tony Ichsan, *Santa Rosa Junior College*
RMA: Luis Rocha, *University of Arizona*
SRAPPA: Marion Bracy, *Xavier University of Louisiana*

AWARDS AND RECOGNITION COMMITTEE (A&R)

The three major responsibilities of the Professional Affairs Committee are the review of nominations and selection of institutions receiving the APPA Effective and Innovative Practices Award (E&I), the Sustainability Award, and the International Award for Excellence (AFE).

The Awards and Recognition Committee also evaluates and recommends the following individual awards: APPA Fellow, the Meritorious Service Award, and the Pacesetter Award.

2013 Awards and Recognition Members

CAPPA: Dave Millay, *University of Arkansas Little Rock*
ERAPPA: Keith Woodward, *Quinnipiac University*
MAPPA: John Ott, *Ohio State University/OARDC*
PCAPPA: David Woodson, *University of British Columbia*
RMA: Emmitt Boyle, *University of Regina*
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CERTIFICATION BOARD REPRESENTATIVE

The Vice President for Professional Affairs position also serves as the elected representative and liaison on the separate certification board to monitor the progress and activities and report back to the Executive Committee and full APPA Board. Under the leadership of APPA's second Certification Board chair Thomas Becker, much effort is being implemented to generate critical mass— approximately 1,000 EFPs/CEFPs by 2015. Currently we have approximately 550 certified or credentialed members.

Credentialing and certification is APPA's investment for the future.

The Certification Board below is fully committed toward making both the Educational Facilities Professional (EFP) and Certified Educational Facilities Professional (CEFP) the gold standard and

THE EMERGING FACILITIES PROFESSIONAL EXCHANGE CONTINUES TO CREATE NEW AND EXCITING IDEAS THE APPA'S EXECUTIVE LEADERSHIP TO CONSIDER.

commonplace within the educational enterprise.

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EMERGING FACILITIES PROFESSIONAL (EP)

The Emerging Facilities Professional Exchange continues to create new and exciting ideas the APPA's executive leadership to consider. This past year has been no exception, with the development of an APPA App that will be unveiled at the annual meeting. Other developments include a number of APPA podcasts thanks to our business partner, Casey Martin from Jacobs Engineering. The emerging facilities professional group host monthly conference call to discuss technology and the expectations of emerging facilities professionals. APPA has been the beneficiary of ideas from this dynamic group. If you know of an exceptional emerging professional who would like to be a part of this group, contact Steve Glazner at APPA, or your regional president.

Current exchange members include:

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Lindsay Wagner:
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In conclusion, it is my distinct honor to serve as your Vice President for Professional Affairs, and I look forward toward an exciting year. I could not have done any of this without your encouragement, support, and friendship along the way.

David Cain is an associate faculty member at Coconino Community College, Flagstaff, AZ, and APPA's Vice President for Professional Affairs. He can be reached at *cain.david@gmail.com*.

APPA—A Link with Our Industry

By James Harrod

"I asked you two weeks ago to change this light bulb, how long is it going to take?"

"Apparently, at least this long or longer."

We can chuckle at this response, as there is a good chance that it has gone through our heads before. We do not answer this way because we have been taught to respond professionally; our responses are developed from interactions with coworkers, mentors, family, and friends.

SUCCESSION PLANS

I was recently at a retirement party for an individual that has been with our institution for 44 years, I couldn't help but think of all of the events that he had witnessed in his career. Before this individual retired we wanted to make sure that a successor had been named. We wanted a person that would capture some of the institutional knowledge that cannot be found by simply searching on Google.

Everyday people are saying good-bye to their career and welcoming retirement with open arms. With this, a large piece of knowledge goes out the door with them. We were fortunate in this situation to have a succession plan but what about the ones that get away? This is where finding an organization that can teach, mentor and offer an opportunity to share information is important. I found that APPA offered all of this.

OTHER WAYS APPA IS THERE FOR YOU

I remember my first APPA Institute in Tampa, Florida. I had been in the workforce for a couple of years and was granted a scholarship from the MAPPA region to attend the Institute. Once I was given the green light to go I was both excited and somewhat nervous, as I really did not know anyone. At registration, the friendly APPA staff, greeted me, and then I headed to my room to drop off the materials I had just been given, and then went to grab a bite to eat. It was the middle of January and being a Midwesterner, I had one thing on my mind: to sit outside and get some seafood. I requested a table for one and sat down.

While enjoying the scenery, an individual approached me and asked I was in town for the Institute. He introduced himself and asked that I join his party for lunch. There I met a group of people from the MAPPA region that have welcomed and embraced me from that point forward. Being connected to a group that is entering its 100th year is pretty amazing. Think of how much our industry has changed over the years. If you want to see where we are headed check out what the Emerging Professionals group is doing.

GET ON BOARD

We all have something to offer. If you are a current member, please remember to reach out to an unfamiliar face. You do not know the difference you may make in their career. It is interesting how one person extending a hand can open the door to getting involved with APPA. There are many ways to get on board. You can start regionally by attending a Drive-In Workshop, travel to a regional conference, or enroll in the Institute.

James Harrod is maintenance & operations manager at the University of Wisconsin Hospital & Clinics, Madison, WI. He can be reached at *jharrod@uwhealth.org*.

Questions Hold the Key

Unlocking Better Decisions and Performance through Asking

By Joe Whitefield

"If there is something you don't know, ask someone." Does that sound like advice you have received at sometime in your life? It sounds simple enough. And yet, we see a plethora of faulty decisions being made that appear to be absent of important information that could/should have been readily available if only someone had asked. Decision making involves processing all kinds of information, often from numerous sources, to assess the trade-offs (costs and benefits). Given the vast amount of data that is available today, one would think that useful information is so abundant, that decisions could practically make themselves. This has not proven to be true in my experience in facilities management. Sometimes the overabundance of data and information can impair the process, as much as lacking information can. Not only does information need to be collected, *it must be verified* as to its accuracy and applicability. This article will address the old fashioned method for information collection and verification: asking questions.

Questions are powerful things. More than simply eliciting answers and information, they can reveal the intentions of the one asking, influence thought, and motivate people to action. Most of us answer questions seemingly all the time. They come from political polls, sports polls, business surveys, health forms, and personal inquires from friends and family. Who wants to know and why are logical questions people often ask before freely answering many questions asked of them. When trust is absent, skepticism abounds. That said, let's look at a couple of areas in facilities management where we are prone to ask questions.

C Completion
O Organization
I Innovation
N Being Nice

SOLICITING FEEDBACK

Soliciting feedback on the performance of an individual or a project/service can be a wise thing to do. Without feedback it is difficult to make necessary improvements for the future. One method that is common here is the use of surveys. While I like surveys in general, I rarely find them that useful. Often the questions ask about customer satisfaction levels but they seem to be incomplete. Simply asking skeptical individuals about *satisfaction levels alone* can be counterproductive. Here is where it can go awry: satisfaction is a comparison of the level of service (performance) with the anticipated level of service (expectation). Basically, satisfaction = performance/expectation (S=P/E). When performance exceeds expectation, P/E > 1, customers are very satisfied. When performance is less than the expectation, P/E < 1, customers are not satisfied. Surveys often ask about performance without asking about expectation. So, if someone is unsatisfied, it could be a matter of expectations being too high, as easily as it could be a matter of performance being too low. Surveys often don't make this distinction.

Here are a few suggestions. First, find customers with whom you have a healthy relationship (where trust is present) and ask them for feedback that addresses their satisfaction based on their expectations and your performance. If your motive is to improve, they can be most helpful. So the obvious question is "How many of your current customers could you approach on this basis?" Second, when asking questions, provide some context and the intentional use of

the information in advance. We have all had the experience of being asked "What are you doing Saturday?" That's when we withhold the answer until we know what the person has in mind. The answer may depend on whether we've been asked to attend a party, or to help move a piano. Finally, if you can't get the information any other way, put out a survey. But, you have to ask the right questions. Make them relevant and thoughtful—addressing satisfaction, performance, and expectations.

SHARING INFORMATION AND MOTIVATING OTHERS

Questions are essential components to conversations and dialog in general. They have other uses than simply seeking answers. Soliciting information offers the ideal opportunity to also share information. Putting questions in context, directing the question, and revealing your intentions to use the forthcoming answers allow others to learn about you or your organization naturally. For example, "We are working on a project to improve our custodial services, do you mind if I ask you some questions about our service?" There are questions that display humility and build trust—What information am I missing? Have I captured the salient points adequately? Use these character questions liberally.

Questions can also be used to motivate. In December 1941, following the attack on Pearl Harbor, Winston Churchill was addressing a joint session of the United State Congress. After describing the how difficult it was to "reconcile Japanese action with prudence or sanity" he asked the rhetorical question, "What kind of people do they think we are?"[1] Churchill may be difficult to emulate, but he is a great reminder of the power of dialog, and how challenging questions can expose reality and inspire action.

Decisions are not made in a vacuum. In order to have effective decisions, it is important to have information that is useful and timely. Since college and university campuses are still places where relationships matter, personal contact and interactions are imperative. Improve your relationships by engaging in healthy dialog that asks questions to seek better understanding, convey intentions and character, and ultimately produce better decisions.

To get started, you just have to ask.

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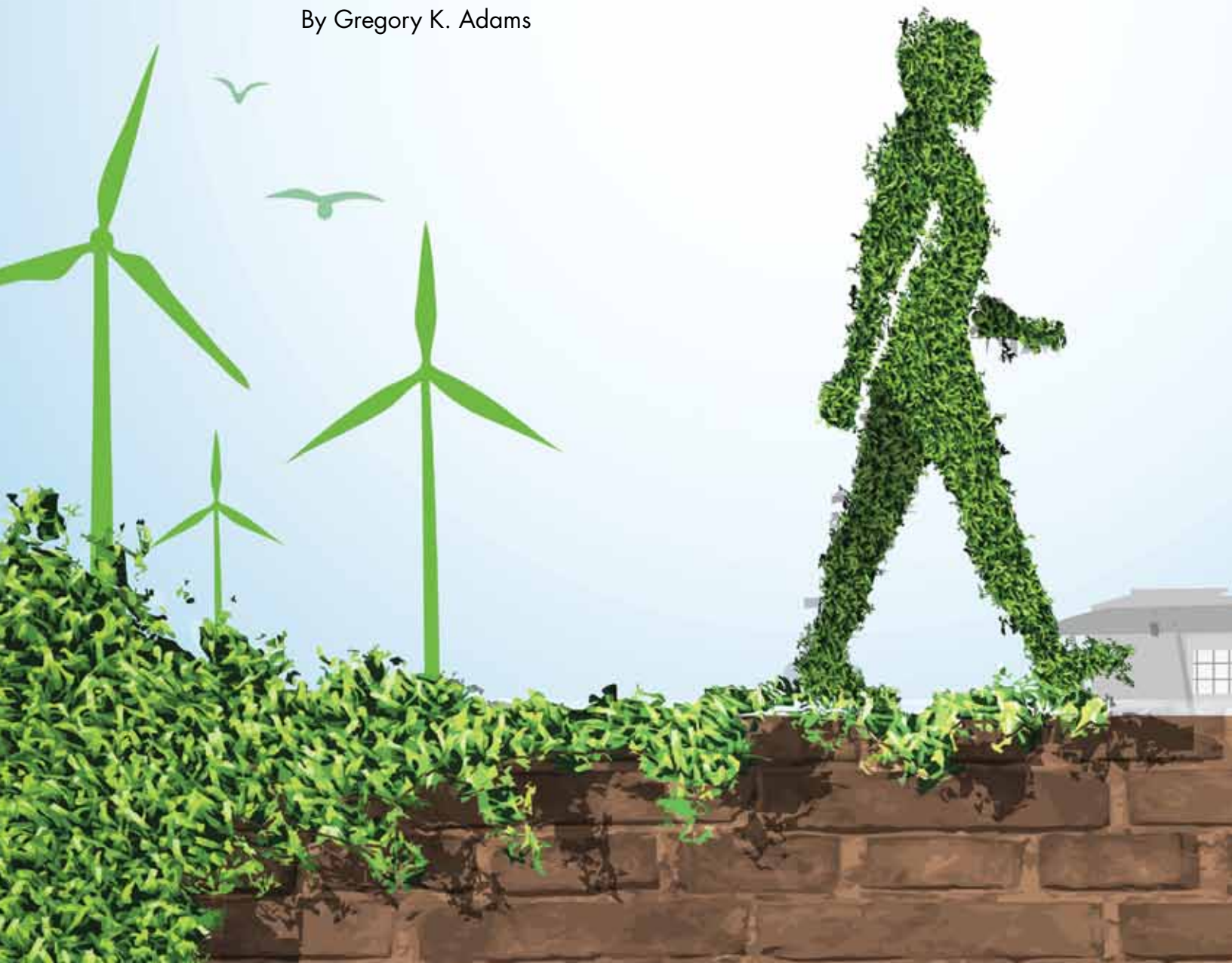
Facility Management's Role in Organizational Sustainability

By Gregory K. Adams



Defining sustainability for any particular area of study, ecosystem, societal institution, organization, or entity is almost always problematic. The literature regularly makes this case (Levin, 1997; Pearce & Vanegas, 2002). Bell and Morse (1999) observe, "Almost every article, paper, or book on sustainability bemoans the fact that the concept is broad and lacks a broad consensus; this is usually followed by the author's own preferred definitions, which in turn add to the lack of consensus!" Bell and Morse go on to argue, building on previous works, that it may not be necessary to closely define sustainability to practice it. It appears to be generally accepted that defining sustainability is context or discipline specific. For the purposes of this article, a sustainable organization and its physical facilities is assumed to be one that fulfills the mission of the organization in way that is least detrimental to the natural environment, the social welfare of the culture in which it exists, and one that can sustain itself financially throughout its life cycle as an organization.

Facility managers have questions about sustainability. How do an organization's physical facilities—its built environment—and the management of them, influence the sustainability of the organization or institution as a whole? How important is Facility Management (FM) to the overall sustainability profile of an organization? If facility managers act in as sustainable a manner as possible in all things within their direct influence, but the rest of the organization pays little attention to sustainability, is it worth the effort? Can environmentally conscious facility managers influence other parts of their organizations to act more sustainably? How is sustainability defined and measured for facilities management and for the entire organization?

Facility managers face a dizzying array of complexities in relation to sustainability in their facilities, and in the larger context of the sustainability of their organizations and the social and environmental contexts in which the organization exists. Pearce and Walrath (2003) compiled and cited over 200 different definitions of sustainability from the literature. Pearce and Vanegas (2002) state, "One of the most significant challenges for applying sustainability to built environment systems is defining exactly what conditions must be met in order for a facility to be sustainable," and that there is no consensus in the literature in how to define sustainability in the built environment.

ACCOUNTABILITY AND REALITY

Facility managers must concern themselves with how operational sustainability fits into the strategic goals of the organization and how the overall organizational sustainability assessment is affected by its facilities. How to direct resources to achieve sustainability in FM, such as the best use of operations and capital renewal dollars, is a complex issue. Theoretical models have been developed for prioritizing and choosing between sustainability project alternatives (Pearce, Gregory, & Vanegas, 2000; Ramkrishnan, 2007). However, these methods are not widely used in the FM environment.

Dresner (2008) concludes his seminal work, *Principles of Sustainability*, with this: "Just because we don't know how to create a truly sustainable society, that doesn't mean we can't do things to become less unsustainable." Among the myriad complexities and choices embodied in sustainability, facility managers might find it helpful to adopt Dresner's philosophy to act within their spheres of influence to make their facilities and their organizations "less unsustainable" until more coherent, coordinated, and universal solutions are presented.

"Ownership" of organizational sustainability performance is often assigned by an organization to its operations function. Many times, sustainability coordinator positions, or similar positions, reside in an organization's facility management operation. These positions are often charged with advancing sustainability within the organization and with accounting for those advances. But then, accounting for sustainability in a coherent manner requires understanding what sustainability means for the organization and requires some ability to measure the state of sustainability in the organization. In addition, an understanding of how organizations become sustainable is helpful.

Increasingly, organizations seek to measure and improve performance within the context of sustainability. Accordingly, many organizations are adopting sustainability reporting guidelines developed

by the Global Reporting Institute (GRI) and other assessment methodologies. Businesses and other organizations typically report performance in quarterly and annual reports. However, GRI guidelines recommend that organizations also report performance in relation to the wider contexts of sustainability:

> Information on performance should be placed in context. The underlying question of sustainability reporting is how an organization contributes, or aims to contribute in the future, to the improvement or deterioration of economic, environmental, and social conditions, developments, and trends at the local, regional, or global level. Reporting only on trends in individual performance (or the efficiency of the organization) will fail to respond to this underlying question. Reports should therefore seek to present performance in relation to broader concepts of sustainability. This will involve discussing the performance of the organization in the context of the limits and demands placed on environmental or social resources at the sectoral, local, regional, or global level. For example, this could mean that in addition to reporting on trends in eco-efficiency, an organization might also present its absolute pollution loading in relation to the capacity of the regional ecosystem to absorb the pollutant (Global, 2007).

THE UNIQUENESS OF EDUCATIONAL FACILITIES

Tracking sustainability is only part of the effort. Understanding how organizations behave, and therefore how they are likely to advance toward sustainability, is important. Organizations behave differently in different sectors. Private organizations act quite differently from public ones. Corporate organizational sustainability in private sector organizations is strategically tied to a profit motive, which differs significantly from public sector organizations, one type of which is the main subject of this paper, namely colleges and universities. Even private sector colleges and universities behave uniquely as a group from other organizations.

Walton and Galea (2005) discuss the differences and tensions between business and universities related to achieving sustainability:

> Few will dispute the claim that universities are unique places and very different from businesses. Tenure, academic freedom, faculty governance, adjunct and part-time teaching, tensions between teaching and research, and other characteristics make universities the special places that they are. Rosovsky (1990) provides an excellent discussion of how these things shape the university. Sharp (2002) lists several relevant characteristics of the nature of the university, including complexity derived from goal ambiguity, numerous sub-cultures of decision-making styles, and conflict revolving around poorly understood problems. Sharp also describes how the mental models held by university faculty tend to be local, and that universities generally do not see themselves as part of a larger, global system.

THE MISSIONS OF HIGHER EDUCATION AND BUSINESS

Walton and Galea also note various arguments as to why businesses choose various corporate stances toward sustainability, all of which revolve around how sustainability affects profit because, after all, producing a profit is the reason businesses exist. However, the mission of universities and colleges is to educate rather than to make a profit, with the possible exception of certain private sector "diploma mills."

Not only are missions different, but Walton and Galea point out the mistrust that exists between faculty and business. Business models are increasingly applied to the classroom resulting in the incremental marginalization of faculty as the "new managerialism that pervades higher education, with its focus on corporate mission statements, goals, monitoring procedures, and performance measures" (Gough, 2004, p. 158). This trend shifts emphasis from a teaching, or a "motive-oriented" mission, to a learning, or "results-oriented" endeavor.

Gough expresses the viewpoint that a business approach in higher education undervalues faculty intellectual skills, academic freedom, equity, and the environment, all of which are important to the pursuit of sustainability. Walton and Galea argue that, in spite of these tensions between business and higher education, that higher education can benefit from business by adopting business best practice in operational areas that both have in common, such as energy management, water management, packaging and waste reduction, facility management, and hazardous materials management. The common functions in common between private sector businesses and higher education identified by Walton and Galea often reside in whole or in part within the responsibility of the role of the facility manager in higher education.

Research by Enticott & Walker, 2008, suggests there is value to an organization in facilities being managed sustainably even if all of the interconnections of the organization in terms of sustainability are not completely understood. However, a discussion is warranted about how higher education organizations are transformed into sustainable ones (Jennings & Zandbergen, 1995).

Bartlett and Chase (2004) edited a compilation of papers about sustainability in higher education finding that effective sustainability efforts emerge from all levels of the university in varying degrees at various campuses—from faculties, administrative units, and student groups. Emphasis is placed on the foundational shifts necessary within institutions to promote sustainability. Such shifts include efforts to redesign curricula to infuse sustainability into subject matter and to promote trans-discipline sustainability instruction, on developing sustainable facility practices, on engaging constituent communities, especially students and faculty, in sustainability awareness and action, and on building a systemwide commitment to sustainability.

In *Higher Education and the Challenge of Sustainability: Problematics, Promise, and Practice*, Corcoran and Walls (2004) edit a compilation of papers focused on higher education sustainability efforts, on the evolution of sustainability declarations in higher

education signed by many college presidents, on the emergence of sustainability as one of the most pressing issues of our time, and on philosophical frameworks for sustainability in higher education. Various projects are presented highlighting efforts of several institutions to promote sustainability on their respective campuses.

Efforts to bring about sustainable universities are varied. Thompson and Green (2005) recognize this in efforts they studied at the University of Rhode Island and from the literature. Thompson and Green note that, while strong support from top institutional leaders is a distinct advantage to sustainability efforts on campus, as in the case of Emory University in Atlanta, Georgia, such support is rare. Quoting them:

> While committed leadership from the top has immense value, we argue that the process of incorporating sustainability into the life and mission of an IHE (Institution of Higher Education) will often involve a relatively small and stable group of faculty and staff. These core leaders will work with a fluid, ever changing coalition of faculty, staff, students, and administrators. These coalition members will have overlapping, but differing, incentive structures and, hence, various levels of commitment. Regardless of their incentive structure, all members of the coalition will repeatedly calculate the opportunity costs of participation and adjust their participation accordingly.

A strategy is proposed where this dedicated, stable core of sustainability supporters can foster transformation on campus by recognizing barriers to sustainability, by working to overcome these barriers through efficient dissemination of information about the needs and opportunities to act, and by creating rewards for acting. The second plank of the strategy is to take advantage of windows of opportunity. The third component of the strategy is to "create sites of unconventional wisdom" through which conservation of existing resources is demonstrated and natural sites are restored to their original states.

Such projects serve to demonstrate to stakeholders how much impact the institutions of higher education (as well as all modern entities) have had on the natural environment. They also serve to raise the awareness of stakeholders of the need to design, build, and operate facilities in a sustainable manner so as to minimize detrimental impacts. An example of such a project is Emory's eco walking tour (Bartlett, 2002). The key to the success of the Thompson and Green strategy is to elevate sustainability to the "action agenda" of the institution, if it does not already reside there.

The implication for facility managers today in higher education is that they are not likely to find themselves mandated to instill sustainability on campus, nor necessarily supported by upper level management in their efforts to implement sustainability. Rather, it is much more likely that facility managers focused

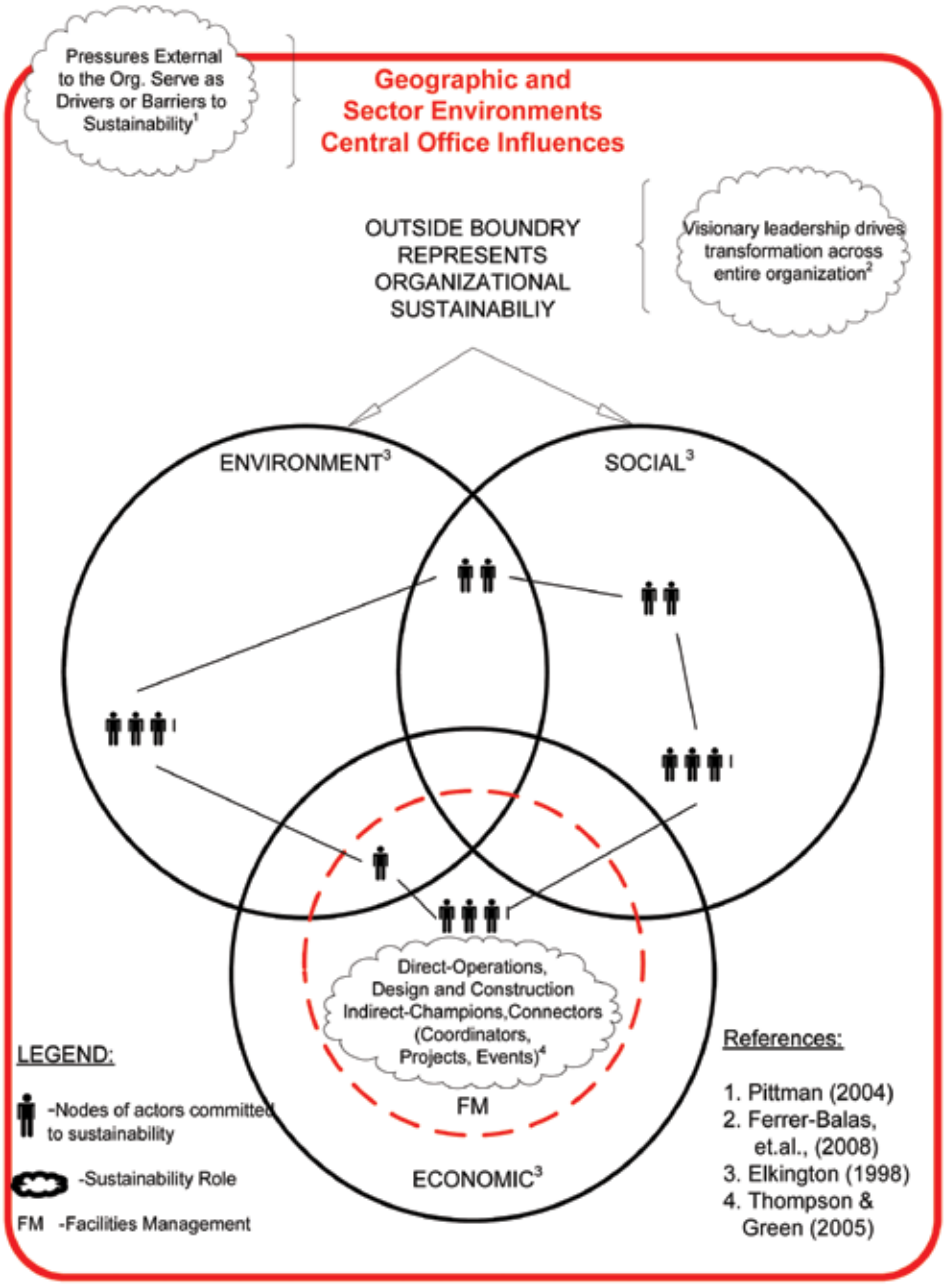


Figure 1. Facilities management roles in organizational sustainability in higher education institutions: a synthesis from the literature

> "Tracking sustainability is only part of the effort. Understanding how organizations behave, and therefore how they are likely to advance toward sustainability, is important."

on sustainability on campus will find themselves a part of a core group of sustainability constituents in the organization searching to find creative ways to network with others to overcome barriers to sustainability. They would achieve this by capitalizing upon opportunities that present themselves to demonstrate sustainability through discrete projects that will, in best-cases, ignite further action toward sustainability which eventually become a part of the strategic plan of the organization until a tipping point is reached that turns the culture if the organization toward one of sustainability.

THE FM CONTRIBUTION TO SUSTAINABLE LEADERSHIP

There are many aspects of FM that affect whether facilities are owned and operated in a more or less environmentally sustainable way, and in so doing, whether or not FM contributes to the overall systemic sustainability of the organization. These aspects of FM sustainability practices are identified in the literature and are collectively conceptualized by this author as belonging to two classes of FM activities, the direct sustainability role and the indirect role. The direct role consists of the more tangible operational aspects of FM under the direct control of practitioners such as how efficiently buildings are operated, how waste streams are handled, whether buildings are constructed in environmentally sensitive ways, and what chemicals are used in the operations of buildings.

The indirect sustainability role is less tangible, being comprised of functional aspects that many times reside in FM such as sustainability coordinators and project managers who can act as sustainability actors and advocates that use their job duties to connect other sustainability actors in the organization by providing sustainable projects, events and initiatives around which other sustainability actors in the organization can coalesce, thereby advancing systemic organizational sustainability. The direct and indirect sustainability roles in FM are assumed to impact organizational sustainability because of evidence from the literature. These roles are modeled in Figure 1, and described here.

The higher education institution exists in the larger environment of the region or sector to which it belongs. Influences in the environment external to the organization can exert pressures on the organization to promote or discourage sustainability (Pittman, 2004). The totality of organizational sustainability exists within the boundaries of the triple bottom line constructs of economic, social, and environmental impacts (Elkington, 1998). Organizational sustainability can be advanced through visionary leadership which helps drive the culture throughout multiple segments of the organization, though it is not absolutely necessary to the development of a sustainable culture (Ferrer-Balas et al., 2008).

Higher education institutions are led to a tipping point toward sustainability through the actions of sustainability champions within the organization in connection with a network of sustainability actors distributed through the organization who capitalize on events, projects, and/or sustainability coordinator positions that act as "connectors" to provide the impetus and opportunity to move the organization toward sustainability, and to grow support for sustainability (Thompson & Green, 2005).

Evidence from the literature demonstrates the influence of facility departments in advancing sustainability within various institutions of higher education through the provision of sustainability champions and through projects such as sustainable construction, recycling, and sustainable housing projects that serve as connectors for nodes of sustainability actors throughout the organization to rally around and in which participants drive the organization toward sustainability.

The author further argues that FM plays a "direct role" in organizational sustainability through those operational aspects that are directly under the control of facility managers and can directly affect the organizational constructs of economic impacts, social impacts, and environmental impacts. Sustainable performance in these areas has been correlated with sustainable performance in the organization (Enticott & Walker, 2008).

The model facilitates understanding the relationship between FM and organizational sustainability in higher education as evidenced by the literature. However, the literature contains little in terms of measuring the strength of the relationship. One would expect the direct role to be more easily quantifiable than the indirect role. However, the real ability of facility managers to ignite a sustainability culture in their organization most likely lies in their ability to leverage relationships across their institutions to influence other sustainability partners using their indirect role in organizational sustainability.

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Mentoring Programs:

An Opportunity to

Some of you may have had the opportunity to view the 2000 movie *Pay it Forward* and for those who haven't, here's a brief synopsis. The plot revolves around a young boy (Trevor) deluged with numerous life challenges. He attempts to make the world a better place via a homework assignment—think of something to change the world and put it into place. Trevor devises the notion that instead of paying a favor back, to pay it forward instead; repay good deeds not with payback, but with new good deeds done to three new people. These three people then pay it forward to nine more people, and well, you get the picture. His notion of "pay it forward" has astonishing results.

You might be questioning what relevance or value might the concept of pay it forward have in regards to facilities management? Does it have a place within our organizations? An unknown author writes, "A lot of people have gone farther than they thought they could because someone else thought they could." Wouldn't you like to be that "someone else"—that one person who plays a significant role in someone's life that lends to their professional growth and success? What an amazing feeling of accomplishment and satisfaction that would be.

Being a mentor to young professionals embodies the pay-it-forward concept. Think of the potential impact if you chose to mentor three people, and they then chose to mentor nine more people, and those went on to mentor 27 more people. The results could be prodigious.

Successful mentoring programs have become valuable, organizational assets. In a May 2012 press release, Management Training Systems stated that "Formal mentoring programs offer employers an opportunity to strategically customize employee careers within the organization in ways that are mutually beneficial to the organization and employees." Nonetheless, successful mentoring programs require a great deal of strategizing and preparation before implementation. In order to embrace the concept of pay it forward with mentoring, organizations must establish validation for the program, delineate development and implementation, and define beneficial outcomes for all key players.

PROGRAM VALIDATION

A critical factor in determining a mentoring program's success is the engagement and support of senior leadership. Commitment must be established at the top of the organization. It must be fostered as part of the institution's culture down to the frontline employee. To establish validation, a thorough needs assessment should be initiated. This is accomplished by departmental surveys, discussion with staff members, or focus groups. Establish data that reflects the number and type of participants that might be interested in long-term, career goals that would benefit from mentoring.

Input from frontline supervisors is crucial in order to gauge if workload will support the necessary time away a protégé or mentee would require. Whether the budget can sustain this type of program is a factor; program benefits vs. budget should be carefully evaluated. Program goals should be established as part of the assessment. Effectively communicate desired outcomes in order to validate the importance of mentoring.

Programs fail because the organization doesn't know what they want from the process. Dr. Lois J. Zachary, author of *Creating a Mentoring Culture*, states, "When you have fuzzy program goals, you have fuzzy outcomes." (Alsever, 2008). Regardless of how tedious the needs assessment process may seem, it plays a crucial role in substantiating the need and importance of the mentoring program.

PROGRAM DEVELOPMENT

Development of a comprehensive program is essential for all key players to benefit from the mentoring process. There are so many perspectives to address, that development is best served by utilizing a diversified, focus group for design. Questions will encompass an array of areas.

Should it be a formal program with specific, organized goals and structure or should it be informal and focus on interpersonal enhancement? Should emphasis lean toward on-board mentoring for new recruits, which will result in a smooth transition and quick development of an understanding of the culture of the university and unit? Or should mentoring be streamlined toward the mid-management level, focusing on professional identity, education, and career and leadership development for successful succession planning?

Regardless of what the mentoring focus is to be, it is essential that program be structured on the foundation of mutual respect and trust between the mentor and protégé. To build trust, both parties must be in full agreement that confidences are not to be shared with others inside or outside of the organization.

Once you have determined your focus, you next need to develop a program description. This document will serve as the policy and procedure handbook for the mentoring program. It should define and outline the goals and benefits, as well as institute the intended outcomes. It will establish the group to be targeted for mentoring, basic guidelines for communicating, and rules for engagement. Program development will also address time commitment, as well as budgetary needs, and a predetermined strategy for successful marking.

SUCCESSFUL MENTORING PROGRAM COMPONENTS

Program Manager: Highly successful mentoring programs require a full-time manager. Granted this necessitates finding dollars in the facilities budget for the position, but the program has the potential to fail without a designated leader. This individual plays a key role in not only organization of the program, but the implementation and monitoring as well. They will facilitate program development with the focus group and prepare a budget plan.

The program manager will maintain the pool of interested parties, oversee the pairing of individuals, and be instrumental in helping them define what the focus and purpose of the partnership will be. Establishing meeting frequency and communication between the partners, as well as training development for mentors, workshops, and other activities will be distinct tasks.

Develop a mentoring agreement, which will outline rules and responsibilities, as well as expectations, termination procedures, and a confidentiality clause. Monitoring is critical for success, and the program must be consistently scrutinized. Feedback from mentors and their protégés, as well as supervisors, will also be needed to ascertain success of the program.

Goals must be measured to see if they are being met. If a partnership is failing, the reason must be determined and a solution implemented. This can all be accomplished with the utilization of surveys, observation, and one-on-one interviews.

Pairing Mentors and Protégés: Nothing will be more significant in establishing a successful program than the pairing of mentor and protégé. It is vital that a great deal of consideration goes into identifying the "perfect" match. The partners need to be able to collaborate and share learning styles, goals, bios, and resumes. This will assist in structuring a beneficial development plan for the protégé.

The selection process will depend on the identification of the group to be mentored. If the emphasis is on new employees, than the mentor should enjoy working with younger individuals. Perhaps the mentoring focus will be toward succession and growing the next generation of departmental leaders. Protégés would then be paired with successful, top-level managers within the organization. How will the pairing be accomplished? Will you rely on your human resources unit to randomly select, or will individuals chose their own mentor—or perhaps they will fill out questionnaires that will determine pairs based on skill sets and/or personal goals?

Some organizations will encourage matches between people from different operations of the institution. This not only fosters cross training and knowledge exchange, but removes the protégé from people that they might interact with on a day-to-day basis. Retired IBM mentoring program manager Shelia Forte-Trammell states, "A perfectly sincere manager can set up an apprentice for failure by blurring the distinction between assigned tasks and mentored activities."(Alsever, 2008). Departmental separation of mentor/protégé has the potential to develop a more trust-based relationship because it lends to more speaking freedom.

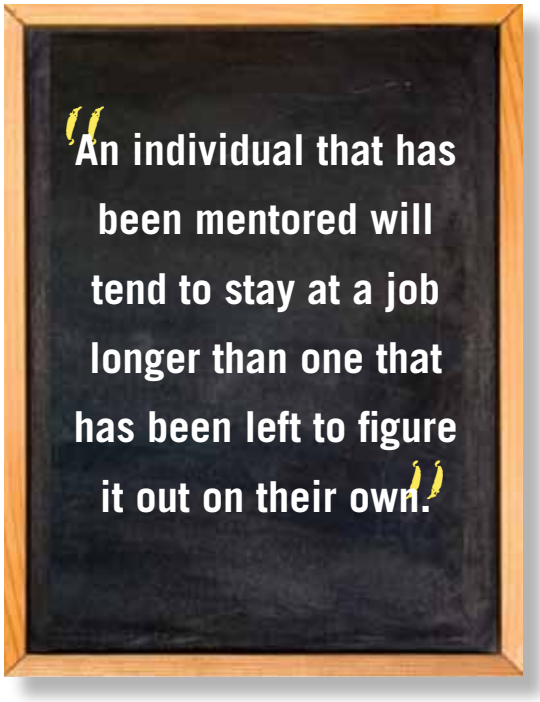
Strategic Marketing: In order for a mentoring program to be successful you must have participants, so marketing will be essential. The goal will be to reach as many interested individuals that will take a vested interest in paying it forward to others. How do you market? You brand and advertise the program very much like you would a product. Emphasis must be placed on the

value of the program—value to the company, to the mentors, and to the protégés.

A more creative, knowledgeable, and connective workforce are strong selling points, as well as innovation and collaboration on all levels. Brochures can be designed and distributed within the organization or at events such as a wellness or job fair. Mass e-mailing or creating a designated website for the program provides marketing opportunities. Posting testimonials from past participants on the Web page is another strategy to utilize.

However, the simplest and least expensive means of marketing the mentoring program is personal communication. Whether it's presented at a leadership meeting or to frontline employees by their direct supervisor, it allows an opportunity for questions and, again, personal testimonials.

Once the mentoring program is fully developed a pilot program should be launched for a specified time period. Upon completion an evaluation including surveys, interviews, and general observations should be reviewed. Use this information to define what worked or didn't work and where improvement is necessary. Once this process is complete and necessary adjustments have been made, the program should again be taken to senior management for review. Upon review, and with full support and commitment from upper management, a full launch should be initiated.



PROGRAM BENEFITS

Validating and developing a mentoring program is a detailed and time-consuming process, but valuable in regards to the significant benefits gained once implemented. These benefits encompass both individuals and the organization as a whole.

For the mentor it might be a greater appreciation of different perspectives or the opportunity to sharpen their leadership and interpersonal skills. Or maybe it is way for them to develop a network of supporters as well as gain insight into other unit's operations. Perhaps it's simply the personal satisfaction of paying it forward; the fulfillment that is obtained from assisting a young professional reach their dreams and aspirations.

For the protégé, mentoring provides networking opportunities and a greater understanding of the culture of the organization. Or possibly it's gaining the ability to establish realistic career goals with guidance from a successful, senior leader. Maybe it's improved performance, or quite simply just the feeling that one obtains in knowing that someone values *you* enough to invest their time so that you can be successful. Perhaps it's the satisfaction of knowing that from this experience, they too can pay it forward.

Personal benefits are important, but benefits to the organization will be the focus of senior management. Studies have shown that employees that participate in a mentoring program are more satisfied, therefore are more productive and happier in their positions. This in turn affects employee retention. An individual that has been mentored will tend to stay at a job longer than one that has been left to figure it out on their own.

Research has shown that employee turnover is most often correlated to the individual not knowing how to do their job, and this leaves them frustrated. Mentoring programs are also an effective way to succession plan. It provides an avenue for organizations to cost effectively groom young professionals for future senior positions. The result of mentoring is a highly skilled, professional workforce that exudes synergy and momentum.

A successful mentoring program is a valuable tool within the facilities organization. Although it requires significant commitment in regards to time and budget, the benefits supersede the negatives. Mentoring is a cost-effective way to retain your shining talent and prepare them to lead. The ability to "customize" employee careers within the organization is an attribute that creates momentum for the future.

With assertive implementation we can effectively create a pay-it-forward matrix that has limitless results. John Crosby once wrote, "Mentoring is a brain to pick, an ear to listen, and a push in the right direction." Let us push in the direction of the future and pay it forward with our employees.

NOTES

1. Alsever, Jennifer. (July 24, 2008). "How to Start a Mentorship Program." *www.cbsnews.com/8301-505125_162-51212133/how-to-start-a-mentorship-program, p. 2-8.*
2. United State Office of Personnel Management. (September 2008). "Best Practices: Mentoring." *www.opm.gov/hrd/lead/BestPractices-mentoring.pdf*, p. 2-20.
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Darcy Loy recently retired as assistant director of grounds after 32 years at Illinois State University. She can be reached at *darcyloy@gmail.com.*

Sustainability and Higher Education, A [Hypothetical] Love Story

By Lindsay Eva Wagner

It is quite clear that sustainability is here to stay, but in many cases we have yet to determine what it actually is. The buzz words and issues—solar panels, wind turbines, recycling, green cleaning, energy management, green buildings, green products, public transportation, and carbon neutrality to mention a few—have all been part of the initial drive to be sustainable. The big question is, can these efforts be sustained? It is time to unpack sustainability and develop a successful long-term relationship.

Creating a healthy long-term relationship requires planning and an understanding of the potential stages that the relationship will go through. The following is a hypothetical love story between higher education and sustainability. All institutions will most likely go through some version of the following stages, but only a small percent will reach the final stage.

THE HONEYMOON PERIOD

In the beginning of a long-term relationship there is a honeymoon period. During this time the love comes easily and the relationship seems effortless. Everything is new and exciting. The focus is on similarities and little attention is paid to the differences. It is often believed that this period will go on forever and there will never be disagreements about anything.

In a campus's relationship with sustainability, this period often involves adding LEED-rated buildings, tending to so-called "low-hanging fruit" of energy-efficient upgrades, and basking in the media attention that follows. All available rooftop space is blanketed with solar panels, and the tax rebates and incentives begin rolling in. Direct digital controls are added to existing heating and cooling systems, and building occupants experience a greater level of comfort.

Decisions are made fast and without long-range planning. The marketing opportunities seem endless, and students are flocking to the institution because it is considered to be one of the most sustainable in the country. We are in love with sustainability; what could possibly go wrong?

ADJUSTING TO REALITY

Something happens, maybe minor, maybe major. Whatever it is, the conflict makes it absolutely impossible to continue believing that the relationship is bulletproof. All of a sudden it becomes apparent that the partnership is not living up to our hopes and dreams. Flaws become evident. There is a desire to become close again, but fear sets in. This is the stage that the real relationship begins.

The LEED-rated buildings are requiring more maintenance than any other new buildings ever have. The replacement parts are more expensive and the repairs are much more complex. There was no additional staff added to maintain and operate these buildings. The roof over the library, where the largest solar array was placed, begins to leak and books are being damaged. Upon calling the contractor to fix the roof, you learn that their contract indicates they are not responsible for roof repair. All the panels must be removed to repair the roof and the entire burden will be the responsibility of the university.

At the same time the utility provider eliminates their incentive program so the university will no longer receive a monthly production-based incentive check. The positive media attention and increased enrollment due to sustainable practices is continuing. That makes it all worth it, right?

THE POWER STRUGGLE

Adjusting to reality becomes more and more difficult. Minor issues begin to turn into major disagreements. Doubts arise and feelings of anger begin to develop. Communication is riddled with sarcasm and hostility. For the first time since the relationship began there are frequent thoughts of leaving.

Building mechanics struggle to keep the LEED-rated buildings running and toy with the idea of bypassing what they feel are trouble spots in the system. Winter sets in and all the rooftop solar systems are covered in snow and power production in minimal. The established set points in the direct digital control system kept building occupants happy in the summer, but they are now complaining of being cold and not having the ability to adjust their thermostats. Mechanics are frustrated because they cannot change the set points without risking the loss of the guaranteed energy savings. Who is in control of this relationship?

REEVALUATION

During this stage the question of stay or go is addressed. Generally each party will turn away from one another and withdraw. If an affair is going to occur, it will occur in this stage. The use of a temporary separation period is available as a tactic to avoid divorce. This stage is a major turning point in the relationship.

As vendors come into the office unannounced, touting the latest and greatest product, general disinterest begins to transform into curiosity. Collections of brochures from other solar companies and other control companies begin to stack up. When you announce a new building project, you decide to test other products and techniques. Will the relationship make it?

ENLIGHTENMENT

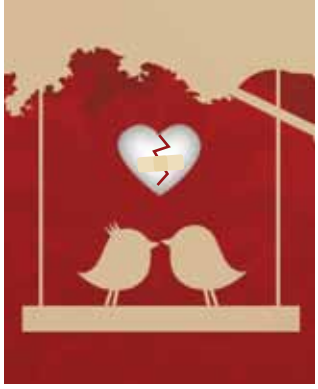
If the relationship survives the reevaluation stage there will be a new spark. An interest in reconnection will develop. Having developed a greater understanding of what is reality and what is fantasy, this attempt has a much better chance of survival. Differences are brought to light and recognized leading to a stronger relationship that is based on honesty and understanding.

This is the stage that building mechanics realize that sustainability is staying, and it would best suit them to learn as much as possible about products and technologies so they can make informed decisions. It is where the light bulb goes on and realizations about the benefits of the relationship are made. Building mechanics begin to share their needs and desires in design meetings and design professionals begin to listen and design buildings based on total cost of ownership as opposed to LEED points. This is a glorious and productive stage. Are you ready to renew your vows?

ACCEPTANCE

This is the final stage in a committed relationship. Very few relationships ever reach this stage, which is one of complete acceptance. There is an integration of individual and relationship needs. There is a positive and supportive feeling. Conflict may still arise, but it is utilized to strengthen the relationship. There are very few surprises. The expectations are known and completely accepted. A true union is established.

Hypothetically, if this stage is reached, the campus would be



full of LEED platinum buildings that operated without a glitch, and with people who wanted to work and learn 24/7 because the buildings were making them smarter and healthier. The entire campus would be off grid and there would never be a utility outage. The building mechanics would have time to give tours and answer questions for reporters because there were never any mechanical issues. Carbon neutrality is reached and no one has to put forth anymore effort. This is the goal, right?

COUPLES THERAPY

Because getting to the acceptance stage in the hypothetic love story is not possible for most institutions, we must take control of this relationship and create an Acceptance stage that is beneficial not only to the facilities manager, but also to the entire campus community. Facilities managers have the opportunity to shape this relationship into something monumental and truly sustainable.

Let's go back to the Honeymoon Period. During this time administration is generally supportive of the budding relationship between the campus and sustainability, which makes it an ideal opportunity for the facilities manager to jump in armed with total cost of ownership data for various products. If you can get the ideal product approved, the Honeymoon Period is going to be prolonged. This ability requires maintaining a high level of knowledge of the products that are on the market.

If your institution is anything like mine, you are most likely stretched way too thin to spend the many hours necessary to research which products will work best for the campus. Don't stress, your busy schedule provides you with the opportunity to get students involved. Often times there are engineering and construction students that need to do internships to meet their graduation requirements. Bring them on board to become your resident expert. Not only are you helping them graduate, you are allowing them to be active participants in sustainability on campus.

Even if you have done all the research and selected what you believe to be the bulletproof product, there is still going to be some adjustment to reality and ultimately a power struggle. Whenever change is introduced there is an adjustment period. You will have building users who do not understand why they can no longer crank up the temperature in their office to 90 degrees. You will have building mechanics who are hesitant and resistant to the change from pneumatics controls to digital controls.

Adjusting to reality and dealing with power struggles will be a lot less painful if a situational communication strategy is developed. There are a broad range of people on campus that all have different levels of understanding when it comes to building technologies. An individual communication strategy must be developed for the various groups across campus. People are much more likely to accept something and get on board with change if you can develop a feeling within them.

Most students, for example, do not have extra money, so quantifying energy savings into something like number of meals that could be purchased monthly hits home for them. They can feel that number. They cannot, however, feel kilowatt hours. Developing strategic messages based on your audience that make them feel something will help in the Adjustment to Reality and Power Struggles stages.

> The real work and the real gains will be made through self and organizational evaluation and improvement.

The Reevaluation period provides a great opportunity to look at other products, but it also provides an opportunity to look within. Are there problems with processes that need to be addressed? Are there training opportunities that have not been taken? Have all possible partnerships and relationships been explored across campus? Have communication methods been successful? Does the campus community know why things are changing? It is easy to blame the product, and search for a new one. The real work and the real gains will be made through self and organizational evaluation and improvement.

THE RECONCILIATION

After all internal processes and practices have been fixed it is time to reconcile. Facilities management staff can lead this effort. As they take on their daily duties the fact that they fully embrace sustainability efforts is visible. They become the face of sustainability, paving the way for full integration into the campus culture.

Acceptance occurs after a solid decision process is developed, students and staff are involved, a communication strategy is created and utilized consistently, internal processes are addressed and readdressed, and excitement is generated. Acceptance is not an endpoint, however. It is the beginning of a vibrant culture of sustainability that reaches and involves each individual that interacts with the campus. The excitement and feeling that is generated spills over in to the community and is carried with students after graduation. The culture of sustainability on one campus can change the way people live. Does your organization have this impact or do you need to consider couples therapy?

Lindsay Wagner is director of energy services and sustainability at Northern Arizona University, Flagstaff, AZ, and the RMA representative to APPA's Information and Research Committee. She can be reached at *lindsay.wagner@nau.edu*, and this is her first article for *Facilities Manager*.

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The advent of massive open online courses (MOOCs) has also brought new dimensions in the discussion between the role of online and the physical campus experience. This panel will review the impact of these technologies on higher education in general, and the new challenges and opportunities in store for tomorrow's facilities leaders in higher education.

This session has been graciously sponsored by: **SIEMENS**

Our Asset, Our Burden—The Future of Campus Space

Space is both an asset and a burden for colleges and universities. On the one hand, space holds enormous value for institutions; their campuses and buildings are worth, in many cases, hundreds of millions of dollars. Space is the medium in which the institution operates. Online courses have proven that education can be conducted anywhere, but most teaching, learning, and research still takes place on campuses. And while the value of buildings and grounds can be calculated, college and university spaces have a greater intrinsic value in the minds of students, faculty, alumni, staff, and community members. Campus spaces and places, the buildings and grounds, hold memories, retain emotions, and represent the ethos of an institution. They represent that "sense of place" so important to an institution's community and brand. Despite this potential for conflict, educational leaders are recognizing the value and cost of their space and are taking steps to better manage it. In this era of constrained budgets, declining state support, and increasing tuition fees, institutions are assessing their limited resources and realizing that their space needs an effective management strategy. Join us for an highly charged session with invited experts who will discuss the challenges of space management and finance, the coming advancements and best practices to embrace, and the new meaning of space in our campuses.

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SPECIAL PROGRAM OFFERINGS

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Today across our campuses we are facing unprecedented challenges and uncertainties that require us to remain flexible and adapt rapidly. Traditional methodologies and ways of thinking are proving to be sluggish and woefully inadequate in dealing with this radical pace of change. Like no time before we must find, embrace, and nourish new sources of energy and ideas. In other words, we must find, embrace, and listen to our emerging professionals.

Recognizing the importance of expanding our emerging professional ranks and allowing their ideas to flourish, APPA is thrilled to announce its first Emerging Professionals Summit, to take place August 1 at the Hyatt Regency Minneapolis in Minneapolis, MN. The 2013 Summit will provide a unique opportunity for emerging professionals to engage with senior leaders in the educational facilities field, explore what the future of higher education will be in 2015 and beyond, share a conversation with Past APPA Presidents in a fireside chat, and much more! If you consider yourself to be one of our emerging professionals, this is an event you simply don't want to miss. If you are one of our "more seasoned" educational facilities professionals, you can't afford not to send your emerging professionals to this summit. Our future rests on their shoulders and the opportunities we afford them today!

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Back by popular demand, APPA's Senior Facilities Officers Summit program will provide a unique opportunity to engage with leaders in the higher education facility field, where you will share information and develop critical strategies that will serve your institution for years to come.

Our programming for this year's offering will deliver sessions from invited experts including: *The Importance of Space Management; MOOCS What are They, and What Impact Will They Have on Facilities?; Alternative Financing Mythology*; and much more! This highly rated and thoughtfully constructed program is designed with input from leading facilities officers within APPA's own membership. We encourage you to register today!

APPA SPECIAL GUEST SPEAKER
FOR EMERGING PROFESSIONALS & SENIOR FACILITIES OFFICERS SUMMITS

Ryan Estis, former Chief Strategy Officer for the $100 million People Marketing division of McCann-Erickson World Group Advertising is widely recognized as a leading expert in Leadership & Culture, Sales Effectiveness, Brand Experience and the Future of Work. Recently recognized as "one of the best keynote speakers seen or heard" by *Meetings & Conventions Magazine* alongside Tony Robbins, Bill Gates, Al Gore and Marcus Buckingham, Ryan serves as the USA Sr. Associate with Employer Brand International, an advisory member on the SmartBrief Workforce Council, is a certified Human Capital Strategist. Participants of the Emerging Professionals & Senior Facilities Officers Summits will join for a joint session with Ryan as he discusses Leading through the Generational Divide—from Both Sides of the Aisle with high energy and immediate resources just for you!

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- COPS and Robbers—Musing of an Old Outlaw
- Get the Right People in the Right Position
- I Can Do That Too! APPA's Awards Programs—A How To On the Submission Process
- Intelligent Buildings—Can they Effectively Respond to Occupant Needs While Reducing Energy Use?
- Making the Connection—Why Customer Service is Essential
- Our Value, Our Values, and the Ask: The Art of Negotiation
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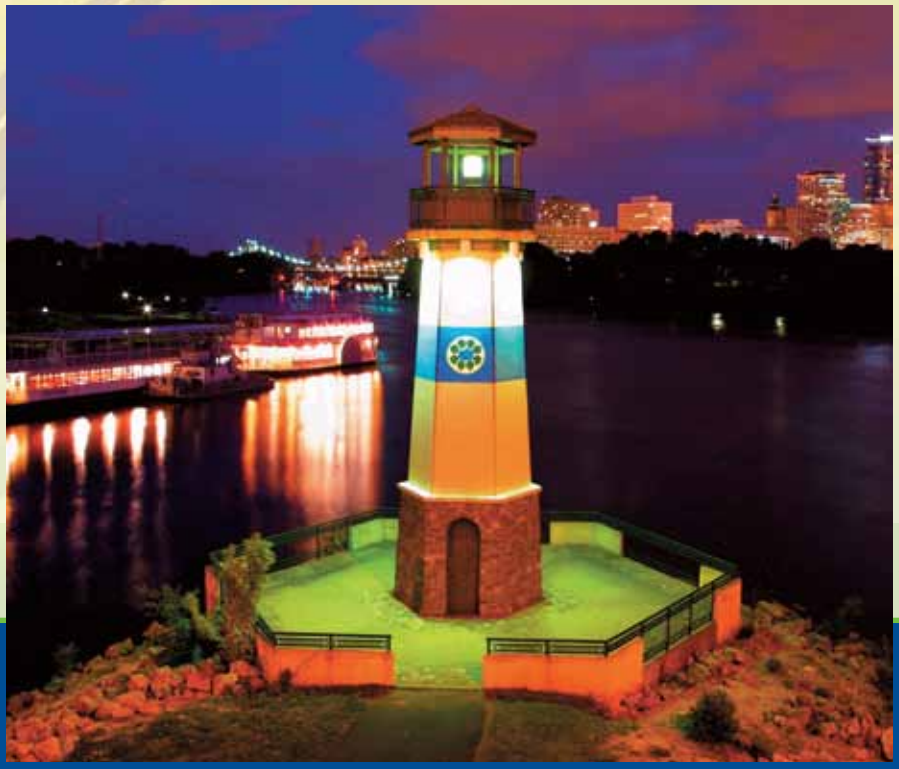

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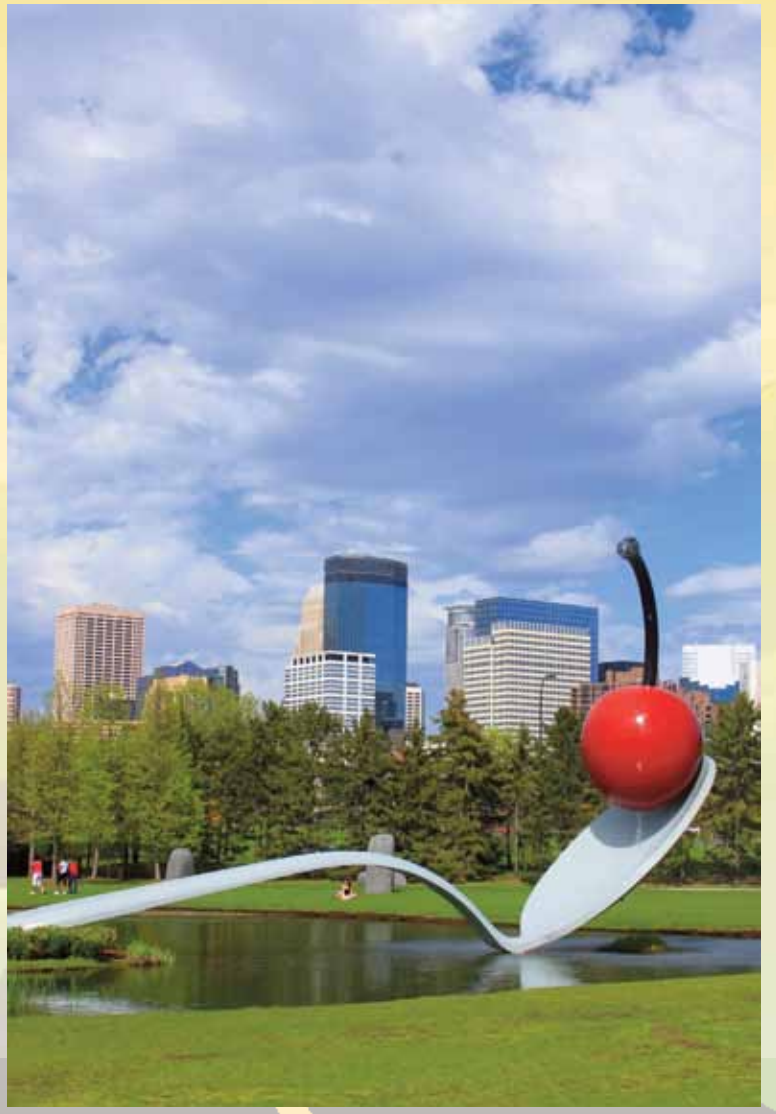

Claes Oldenburg and Coosje van Bruggen Spoonbridge and Cherry 1985–1988 aluminum, stainless steel, paint Collection Walker Art Center Gift of Frederick R. Weisman in honor of his parents, William and Mary Weisman, 1988

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APPA Code Advocacy Impacts Campus Fire Officials

By Alan Sactor

Campus fire officials at APPA member institutions may not be aware of the impact of APPA code advocacy efforts. Some campus fire officials are involved in code development, usually through direct association with the National Fire Protection Association (NFPA), International Code Council (ICC), or by individually submitting comments on proposals. Because APPA is primarily associated with facilities management, campus fire officials may not always be aware of the code advocacy efforts. APPA members are encouraged to educate campus fire officials at APPA institutions on these efforts.

APPA provides full-time involvement in code advocacy through generous staff support from the University of Michigan. Members of the APPA Standards and Codes Council dedicate time and expertise in the interest of member institutions. It takes time and energy to track and assess the broad spectrum of international codes and standards that are constantly under development. Effective code advocacy is similar to a chess game—it requires thinking that is always several moves ahead. APPA provides that proactive strategy.

APPA ACTION

Success doesn't always come on the first try. APPA recognizes this, and also embraces it. By submitting proposals and comments—even though they might not be successful—code and standards organizations are put on notice that more action from APPA will follow. Nowhere has this been more successful than APPA's proposal to NFPA to create a specific code for colleges and universities. The NFPA Standards Council rejected the proposal, but opened the doors to working with APPA to address the needs of the campus environment. The result will be a ground breaking joint platform—initially available in electronic form—which will have a widespread impact on campus fire officials. While still in negotiation at the moment, the direction of development of the joint APPA/NFPA platform will permit industry-specific annotations and exceptions to run side by side with pages of various NFPA documents, starting with the NFPA *Life Safety Code*®.

APPA actively encourages campus fire officials and other campus representatives to serve on NFPA committees to assure that college and university interests are represented. APPA draws on the expertise of committee members to track code development and further strategy. When issues involving a particular code or standard impact one campus, they generally affect all campuses.

The concepts of integrated fire and life safety system testing were being put into practice at Harvard University with the guidance of NFPA 3 (*Recommended Practice for Commissioning and Integrated Testing of Fire Protection and Life Safety Systems*). Paul Dunphy, an electrical inspector and compliance coordinator at Harvard, became a staunch advocate of integrated fire and life safety system testing on all of the university's new building projects, and for most of the more involved renovation projects.[1] Dunphy felt that the practice of testing and commissioning was of real value to universities and APPA agreed.

NFPA is currently developing a new standard, NFPA 4 (*Standard for Integrated Testing of Fire Protection and Life Safety Systems*), and revamping NFPA 3, which remains a recommended practice. Dunphy now represents APPA as a principal member or the Technical Committee for Commissioning and Integrated Testing, working on both NFPA 3 and NFPA 4.

APPA GOALS

APPA goals are in line with campus fire officials. While safety is a primary driver of APPA's code advocacy effort, cost can also be a factor. In many cases they go hand in hand, as money and resources can be conserved without affecting safety. For example, APPA had significant success on NFPA 25 (*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*) by proposing that the frequency of observed fire pump runs be reduced from weekly to monthly.

Campus fire officials try to ensure that testing frequencies are met, even though sometimes acknowledging that they might not be practical. APPA utilized the experience of campus and allied federal experts to support the position that monthly testing of electric motor driven pumps does not reduce reliability. Even though energy costs, water usage, and sometimes even labor costs are reduced, cost reduction is not always an immediate or guaranteed outcome. Integrated testing of fire and

life safety systems as prescribed by NFPA 4 may increase construction costs, but buildings will be safer and long-term savings could result as systems operate in a more efficient manner.

APPA STRATEGY

APPA strategy includes more than tracking code development. Mike Anthony, a member of APPA's Standards and Code Council, believes that influencing and contributing to the codes-setting process requires staying in front of trends. Developing professional relationships and coalitions and promoting innovation in technologies are key components of the forward thinking strategy.[2]

APPA represents a $175 billion dollar industry that purchases a significant amount of fire protection and life safety equipment. When this is combined with the expertise of fire officials, fire protection managers, and facilities professionals of APPA member institutions, it can create incentive for innovation. The educational environment is ripe for proven products that can improve fire and life safety.

SUMMARY

Although campus fire officials may not be aware, the impact of APPA code advocacy on fire and life safety is significant. APPA employs proactive strategies to gain positive win-win outcomes on fire and life safety issues. Fire and life safety standards and codes are addressed, along with economic and resource considerations, by utilizing the experience and expertise from member institutions and allied industries.

The business of standards and code development is international, complicated, and fast paced. APPA maintains effective presence through professional leadership and dedicated individuals from member institutions. Hopefully, the information presented here will inspire APPA members to collaborate with their local campus fire safety officials.

ENDNOTES

1. Dunphy, P. (2011). How Colleges and Universities Can Demonstrate the Value of the New NFPA 3. *NFPA Journal*, September/October 2011. Retrieved from *www.nfpa.org*.
2. Anthony, M. (2012). Foreword. *2011-2012 Public Policy Agenda: Standards and Code Issue Priorities of the APPA Code Advocacy Task Force* (pp. 3-4). Alexandria, Virginia: APPA.

Alan Sactor is the University Fire Marshal and an assistant director in the Department of Environmental Safety at the University of Maryland, College Park. He serves on the APPA Standards and Code Council and the Board of Directors of the Center for Campus Fire Safety. He can be reached at *asactor@umd.edu.*

Floor Covering Distress: The Pros and Cons of Current Repair Strategies

By Martin R. Maingot, P.E., S.E.

Placing floor coverings over concrete slabs is not a new concept. Low-permeability floor coverings have been installed over concrete slabs for more than a century. However, advancements in concrete construction and floor covering technology over the past 25 years have caused flooring performance problems to reach critical levels. "Fast-track" scheduling (overlap of construction and design phases) tends to worsen the problem with significantly less concrete drying time; value engineering that eliminates vapor retarders; and a growing number of low VOC adhesives with considerably greater moisture sensitivity than in the past. While some problems can result from flooring not being installed in accordance with manufacturer's recommendations, more floor covering problems are now related to excessive moisture within the concrete slab and moisture migration through it.

THE OPTIONS

There are a number of options available to repair flooring distress caused by moisture vapor. The following repair outlines represent the most current mitigation strategies and provide valuable insight as to the associated advantages and disadvantages for each option.

Option 1 – Liquid-Applied Moisture Suppression Systems

Pros: Odds of effectiveness – *High*
Destructive to existing structure – *Low to Medium*

Cons: Cost – *Medium*
Disruption to tenant - *Low to Medium*

Concrete slabs with excessive moisture content must have the moisture isolated from the adhesive and resilient floor covering. Currently the most effective solution is to 1) remove the existing flooring, 2) shotblast the concrete surface, 3) install a liquid-applied moisture suppression membrane topped with a skim coat of cementitious underlayment, and 4) reinstall the original or new floor covering. This option can provide a long-term solution that would permit installation of future floor coverings without having to renew the moisture suppression coating each time. It has been found through testing that "water-based," "water-borne," or "water-reducible" coatings are not as effective in moisture suppression as epoxies with 100 percent solids. It has also been found that solutions of alkali silicates are essentially ineffective for this purpose.

While the 100 percent solid epoxy coatings cannot be applied under existing interior walls, experience has shown that moisture vapor movement does not increase through uncoated adjacent areas of the slab (i.e., under existing interior

WHILE SOME PROBLEMS CAN RESULT FROM FLOORING NOT BEING INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, MORE FLOOR COVERING PROBLEMS ARE NOW RELATED TO EXCESSIVE MOISTURE WITHIN THE CONCRETE SLAB AND MOISTURE MIGRATION THROUGH IT.

walls) because the existing moisture condition throughout the slab will remain unchanged.

It should be noted that there are a number of products that recently introduced rapid, one-coat systems that can be installed in a much shorter time period than previous systems.

Option 2 – Pre-Formed Moisture Retarder Sheet Underlayment

Pros: Odds of effectiveness – *High*
Cost - *Low to Medium*
Disruption to tenant – *Low*
Destruction to existing structure – *Low*

Cons: Not a permanent solution; underlayment must be replaced each time the floor covering is replaced.

Not appropriate for concrete slabs with a relative humidity of more than 95%. Accurate relative humidity measurements are required prior to selecting this as a repair option.

Vinyl-backed modular carpet or vinyl composition tile (VCT) can be installed over a preformed moisture retarder sheet. Existing vinyl tiles should be removed first and the underlying concrete surface should be prepared flat and smooth to avoid damage to the underlayment and to avoid reflection of imperfections through reinstalled tile. Like the 100 percent solid epoxy coatings, this option cannot be installed under existing interior walls; however, it will not increase moisture vapor movement through untreated areas for the same reasons as with Option 1.

Option 3 – Remove and Replace (Slab on Grade only)

Pros: Odds of effectiveness – *High*

Cons: Cost – *Very High*
Disruption to tenant – *Very High*
Destruction to existing structure – *Very High*

The concrete floor slab can be sawcut and removed in sections, followed by preparation of an adequate subbase, installation of a vapor retarder directly below the new slab to preclude additional ingress of subslab moisture, and construction of a new floor slab. The freshly placed concrete will require several months to sufficiently dry before reinstallation of a floor tile system. The process of demolition and construction will be noisy, produce vibrations, and will require isolating areas with temporary walls or barriers to prevent airborne dust and contaminants from entering other areas. To shorten the overall construction schedule, the concrete could be sealed with a moisture suppression system (MSS) after it has cured and dried for approximately one month.

Option 4 – Thin Bonded Concrete Floor Slab Overlay

Pros: Odds of effectiveness - *High (if properly designed and installed)*
Cost – *Medium*

Cons: Odds of effectiveness – *Low (if not properly designed and installed)*;
Disruption to tenant – *High*
Destruction to existing structure – *High*

Instead of replacing the entire existing concrete floor slab in the distressed areas, another option is to remove the existing floor tile, and adhesive, abrasively remove a sufficient amount of the concrete slab surface to prepare a clean surface, install a liquid-applied vapor retarder (damp proofing membrane) on the surface of the old, clean floor slab, and then place a thin bonded concrete overlay.

The concrete mix for this new topping must be carefully designed and the system specified in detail to produce a floor that will dry quickly with minimal cracks and acceptable flatness. Thin *unbonded* overlays (2 inch or less thickness) are not acceptable because of the potential for shrinkage, cracking, and curling. This method requires that the existing slab not have any significant amounts of reactive aggregates or other expansive particles.

Option 5 – Raised Access Floor System

Pros: Odds of effectiveness – *High*
Cost – *Medium*
Disruption to tenant – *Low*
Destruction to existing structure – *Low*

Cons: This is not a permanent solution. Raises floor approx. 2" which may present grade issues for the tenant.

Raised access floors may not be appropriate for all tenant uses.

A modular raised access floor system can be installed over an appropriate vapor retarder placed on top of the existing floor system. This proposed method does not require demolition and removal of the existing concrete floor slab and can be installed more quickly and with least operations disruption.

This proposed method "covers up" the existing distressed floor. By using low height pedestals (approximately 2 inch), ramps may be required at transitions in and out of some areas, at floor drains, at doors and wherever access to the space is required from the existing floor elevation. The vapor retarder on top of the existing floor slab is necessary to inhibit moisture ingress underneath the raised access floor system and prevent microbial growths and corrosion of the raised access floor system.

THE RIGHT OPTION FOR YOUR INSTITUTION

Taking into account existing tenants' use and likely intolerance for disruption, it is suggested to consider Options 1 or 2. While all of the repair options cause disruption, Options 1 and 2 will have the least impact on existing tenants and are likely to be effective if installed properly. The main differences between these repair strategies are, besides cost, Option 1 is more permanent and takes slightly longer to install, while Option 2 must be reinstalled each time new flooring is installed but has a quicker installation time.

For any of these systems, it is imperative to contact the various manufacturers' directly for details and closely examine installation requirements, warranty provisions, and references for performance history. It is also equally important that approved installers be specified since some moisture suppression vendors offer different coverage in their warranties depending on the level of expertise and training of their installers.

Martin Maingot is senior engineer at CTL Group in Skokie, IL, and can be reached at *mmaingot@ctlgroup.com*. This is his first article for *Facilities Manager*.

FPI 2012—Did You Know?

By Maggie Kinnaman, APPA Fellow

For more information about FPI, visit *http://www.appa.org/Research/FPI/index.cfm*

When using APPA's Facilities Performance Indicators (FPI) to tell our facilities story, most institutions utilize the tried-and-true ratios such as cost per GSF, GSF per FTE, Btu/GSF, Needs Index, and FCI. But let's take a look at some of the other data points and ratios that also present some interesting information.

NASF/TCO

As an example, in module 2 we find a number of ratios related to NASF. An interesting ratio is NASF/Space Inventory GSF for which the overall average is 66.49 percent. This implies that when a new building is built that is 200,000 GSF, only approximately 133,000 NASF is available for programmatic assignment. This means, that 33.5 of the GSF is supporting infrastructure, corridors, elevator shafts, etc.

This is an interesting ratio when coupled with the new Total Cost of Ownership (TCO) report in module 5. In it, we find that on average the TCO per GSF of space is $21.18 per GSF per each year of a buildings useful life. So going back to our NASF ratio, I'm wondering if there is a strategy that we can use to design our buildings in a way that more SF is available for programmatic assignment. After all, if you're paying $21 for each SF per year, then increasing the space used by the academic community would certainly be the goal. This entire concept would make an awesome Center for Facilities Research (CFaR) project, so I extend that challenge to each of you.

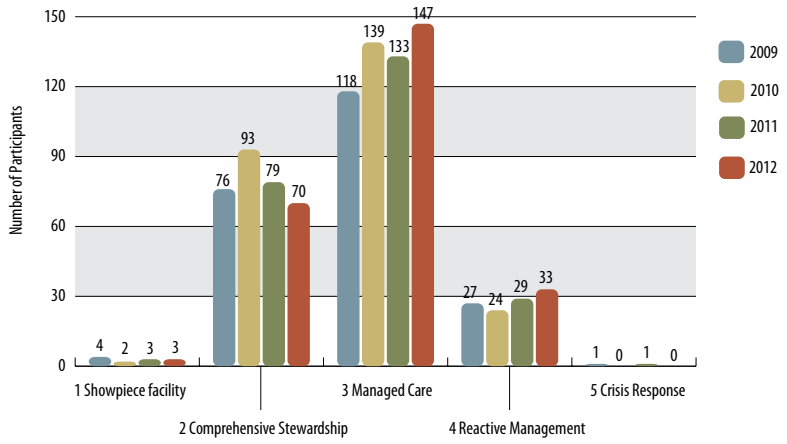
STAFFING LEVELS

Another interesting area of the report is the demographic information. I find the staffing ratios and levels of service particularly affirming. Looking at the custodial trend analysis, we have shifted from a Level 2 cleaning (APPA's recommendation) to a Level 3. This trend is also evident in grounds services, while maintenance seems to be holding its own by remaining at Level 2. These statistics are right in line with what we know to be true: we've downsized our staffs, and are being asked to do more with less, consequently affecting the service levels.

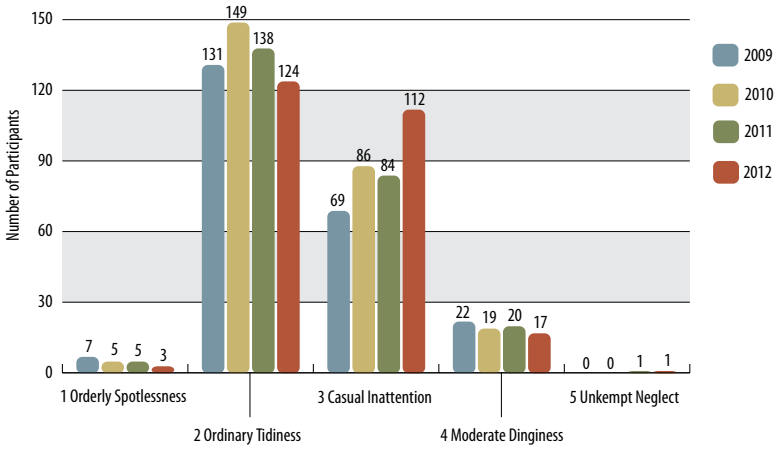
AS A BUILDING AGES

In module 5 the new Building Aging Ratio has pointed out a number of things. First is that the data being captured in average age of mission critical buildings is unadjusted for major recapital-

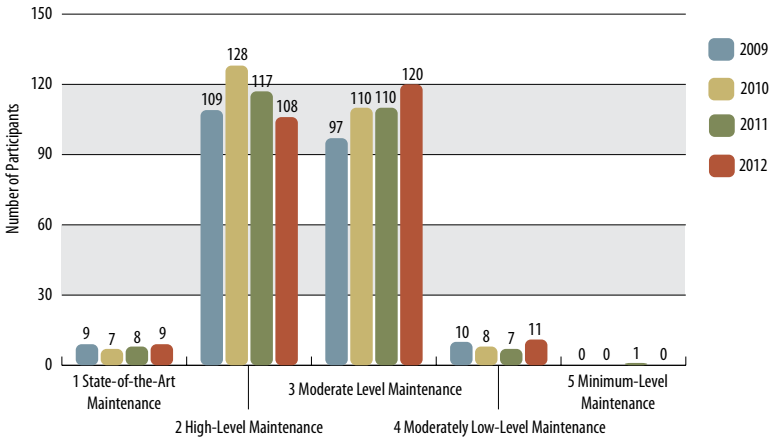
Distribution of Respondents by Maintenance Service (Staffing) Level – Fiscal Year 2011-12 APPA FPI Report



Distribution of Respondents by Custodial Service (Staffing) Level – Fiscal Year 2011-12 APPA FPI Report



Distribution of Respondents by Grounds Service (Staffing) Level – Fiscal Year 2011-12 APPA FPI Report



ization—even though the instructions indicate that an adjustment should be made.

For example, the calendar age of a building that was built in 1970 is 43 years old. But during those 43 years, major recapitalization has certainly occurred that would adjust the calendar age. Our 2012 survey tells us that the average age of buildings is 37.3 years while the useful life is 53 years. The building aging ratio is 74 percent which I believe is high due to the lack of adjusting for recapitalization.

TCO

In module 5, you will also find the new Total Cost of Ownership report that was derived from data currently being collected in FPI. The report calculates an average total cost of ownership for each year of building useful life for an entire campus. It's important to understand that, because this is an average; it does not take into consideration the ranges of TCO when based upon building type.

As an example, using our FPI 2012 data the average CRV/GSF for research space is $453 while the average CRV/GSF for classroom/administrative space is $332. When you look at the cost per GSF for each year of useful life, we're looking at $8.55 for research space and $6.26 for classroom/administrative space. This differential would impact both the construction and recapitalization components of TCO. We also know from experience that it is much more costly to provide maintenance services and utilities to a research building than it is classroom/administrative space. However, we cannot look to the data set for guidance here as we are not collecting annual operating expenditures based upon type of space. The spreadsheet below demonstrates the variety in Total TCO given different building types and different years of useful life.

For a research building with a 30-year useful life, total TCO would be $37.39 for each GSF for 30 years. For a classroom/administration building with a 53 year useful life, total TCO would be $19.55 for each GSF for 53 years. Remember that our FPI report is displaying the average Total TCO of $21.18 for 53 years. As you can see, Total TCO is greatly affected by the type of space and the years of useful life.

FUTURE RESEARCH

I hope that I've piqued your interest in exploring what the Facilities Performance Indicators Report (FPI) has to offer. There is so much data to explore, and so many areas that are worthy of future research. If you are looking for a research project, look no further, as the survey has been conducted, the data set established, and the next step is for you to conduct some research that will add to the Body of Knowledge of our profession.

Maggie Kinnaman is APPA Emeritus Member, APPA Fellow, and Past APPA President. She can be reached at *maggiekinnaman@comcast.net.*

TCO By Building Type of Space

Space Type	CRV/GSF	Construction	Maintenance*	Recapitalization	Demolition	TCO with 53 year useful life
Research	$453.00	$8.55	$6.79	$8.55	$0.24	$24.13
Classroom/Admin	$332.00	$6.26	$6.79	$6.26	$0.24	$19.55

Space Type	CRV/GSF	Construction	Maintenance	Recapitalization	Demolition	TCO with 30 year useful life
Research	$453.00	$15.10	$6.79	$15.10	$0.40	$37.39
Classroom/Admin	$332.00	$11.07	$6.79	$11.07	$0.40	$29.33

Space Type	Useful life 53	Useful life 30	Avg TCO
Research	$24.13	$37.39	$21.18
Classroom/Admin	$19.55	$29.33	$21.18

* We are using the overall average of maintenance which includes purchased utilities. We know that it costs more to service a research building than a classroom building but FPI does not currently collect this information.

Financing The Future: How Green Revolving Funds Can Help You Pay For Energy Projects

By Max Storto

In 2012, the Deutsche Bank Climate Change Advisors and the Rockefeller Foundation published a research study finding that buildings consume 40 percent of the world's energy and are responsible for an equal percentage of global carbon emissions. The study states that current technologies can provide necessary relief to the American economy while simultaneously reducing energy consumption. If the U.S. invests $279 billion in retrofits across the residential, commercial, and institutional markets, it can yield more than $1 trillion of energy savings over 10 years, equivalent to 30 percent of the annual electricity consumption, and would create more than 3.3 million cumulative job years.

A BUSINESS CASE FOR INVESTING

Although economically advisable in the long term, energy-efficiency upgrades require significant upfront investments and are difficult to finance in our still-recovering economy. Green revolving funds (GRFs) help alleviate initial barriers to entry by providing a streamlined internal financing vehicle for energy-efficiency projects. GRFs supply funding to finance sustainability projects that generate cost savings; the savings are tracked and used to replenish the fund for future projects, establishing a self-sustaining financing mechanism that cuts operating costs and reduces an institution's carbon footprint.

GRFs benefit institutions in numerous ways when compared to one-time investments. They demonstrate the business case for sustainability, exhibit an institution's commitment to the environment, engage and educate the campus community, and leverage fundraising opportunities. Ultimately, revolving funds help institutionalize sustainability in an organization's culture by transforming expenses into investments and providing a perpetual funding source for cost-saving initiatives.

GRF PRACTICES IN NORTH AMERICA

The Sustainable Endowments Institute (SEI) released the second **Greening the Bottom Line** report last fall, which surveyed institutions of higher education throughout North America about GRF practices. The study found that 79 unique funds exist in 31 U.S. states and two Canadian provinces, representing $110 million in cumulative committed capital. Within that group, institutions that provided ROI data indicated a median annual return on investment of 28 percent. The strong ROI helps explain the growing trend of GRF adoption in higher education, as the number of GRFs almost doubled from 2010-12, and also reframes the argument that energy-efficiency projects are investments, not expenses.

Green revolving funds all share the same general principles, but each institution must tailor certain components to ensure a successful implementation process. Finding seed capital, creating the correct accounting system, establishing payback mechanics and project selection criteria, and measuring savings will differ based on an institution's needs. It is essential to engage a diverse set of campus stakeholders to both build buy-in from multiple campus entities and also leverage the insights of experts on campus to create the best model. Furthermore, use existing research and case examples while generating administrative support for a fund.

GREEN REVOLVING FUNDS ALL SHARE THE SAME GENERAL PRINCIPLES, BUT EACH INSTITUTION MUST TAILOR CERTAIN COMPONENTS TO ENSURE A SUCCESSFUL IMPLEMENTATION PROCESS.

The University of Minnesota's flagship campus in the Twin Cities established the Energy Conservation Internal Loan Program in 1998. The University created their $4 million fund at a time when "the university prioritized a wide approach to sustainability and waste-abatement, which helped to bring the operational focus and administrative focus to their financing initiatives," says Amy Short, the campus sustainability director. The fund, which is run by the facilities management department and sustainability office, is part of an energy reduction strategy that

has led to $5.6 million of annual savings and has offset 50,000 tons of CO_2. The fund committee works with the finance staff to target projects with a five-year payback, and uses interest from students, faculty, and other constituents to drive their initiatives. Although projects are financed from multiple sources, Campus Sustainability Coordinator Shane Stennes states that the Loan Fund is "one important tool in our portfolio to reduce energy and resource consumption on campus and improve the efficiency of our facilities in our physical plant."

ESTABLISHING A GREEN REVOLVING FUND

Much of the legwork for establishing a green revolving fund has already been carried out. SEI has created an online Web tool to manage financial-, energy-, and carbon-data called the Green Revolving Investment Tracking System (**GRITS**). GRITS not only helps institutions overcome obstacles that arise from measuring and verifying complex energy- and cost-data by tracking project performance, but also allows schools to view project data from its peers. This project-sharing platform allows stakeholders to consider hundreds of extra data points when planning their own energy conservation measures.

Additionally, SEI released the **Introductory Guide to Implementation & Management** that outlines the ten primary steps to launch a GRF and discusses customizable fund parameters. SEI also published nine case studies and an investment primer that provides a good overview for GRF examples and answers many financial questions.

To coordinate efforts and encourage sharing of best practices, SEI launched an initiative called the **Billion Dollar Green Challenge**. The Challenge encourages institutions to allocate a cumulative one billion dollars in self-managed GRFs and take part in a national collective to engage in innovative sustainability financing practices. Participating institutions and organizations commit to sharing expertise and project information with peers. This initiative has catalyzed the recent GRF movement and helped foster a group that can collaborate to solve large-scale energy problems.

For more information on how your institution can take advantage of these transformative programs, be part of a growing movement, and contribute to the broader collective knowledge and communication on this important subject, contact the Sustainable Endowments Institute at *info@endowmentinstitute.org.*

Max Storto is senior research fellow & program coordinator at the Sustainable Endowments Institute, Cambridge, MA. He can be reached at *max@endowmentinstitute.org.* This is his first article for *Facilities Manager.*

APPA'S BOK SUBSCRIPTION IS NOW INCLUDED IN YOUR MEMBERSHIP DUES!

You already know about the value of APPA's **Body of Knowledge** (the BOK)—available in a searchable, online digital database. And now, everyone at your institution will have access to this powerful tool upon payment of your 2013 APPA dues. No more subscription: Instead, you will get instant access to the BOK, with its best practices, recommendations, resources, and professional guidance to aid you in supporting the mission and vision of your educational institution—simply by being an APPA member.

The BOK is an ongoing project, is updated regularly, and works in concert with other APPA educational and career-enhancing opportunities, such as APPA's Institute for Facilities Management, the Certified Educational Facilities Professional (CEFP) credential, and the Educational Facilities Professional (EFP), to name a few.

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

The topic of sustainability

is not new to APPA members, but it continues to grow as a topic for both APPA members, others in higher education—and in society in general. The two books reviewed this month look at implementation of institutional-wide sustainability, as well as personal sustainability.

In order to continue with the sustainability focus, if you are reading this online, don't print; if you're reading the print version, share it.

THE SUSTAINABLE UNIVERSITY: GREEN GOALS AND NEW CHALLENGES FOR HIGHER EDUCATION LEADERS

James Martin, James E. Samels & Associates, The Johns Hopkins University Press, Baltimore, MD, 2012, 352 pages, $45 hardcover, $37.80 Kindle.

The American College & University Presidents Climate Commitment started in 2006 with 12 founding signatories. Now there are about 675 campuses that have signed on to the commitment. The commitment is a big one for both campus operations and academics. It is such a big commitment that campuses need some help to get started. That's why James Martin and James Samels wrote and incorporated the recommendations and observations of other authors to create *The Sustainable University*.

The Sustainable University is more about the academic implementation, but there's also plenty of information for administration. Energy conservation, facility conservation, and rethinking the entire resource consumption cycle (low-bid, delivery, distribution, use/consumption, disposal, repeat) are addressed. Many of these issues are not new to APPA members, but they will be new to procurement agents. Where higher education administrators, including facility officers, will benefit is the discussion about the total life-cycle cost, and articulating it to others.

The Sustainable University is also about the campus mindset. How can the academic program become more sustainable? Is sustainability a single, academic area, or is it really something that pervades all academic programs? If it is the latter, what techniques can be used to implement it when some faculty members don't see how to incorporate sustainability into their courses?

And what about the student life side? It's not about events like Recyclemania, but rather about creating a campus environment where sustainable living and actions are natural or encouraged to be natural. My interpretation from the book is that a sustainable campus is like any other: the search for knowledge includes the search for sustainability. Said another way, one gets a higher education because of a desire to become a continuous learner, either by studying the ideas of others or by studying the facts and developing one's own ideas. One becomes sustainable by doing the same thing.

Again, this book is not focused on facilities; it has a much broader audience. I'll reread the parts focused on facilities several times so I become an expert in my own right; I'll reread the non-facilities parts so I understand how I can help others on campus in my role as facility officer. APPA members who read this book will receive similar benefits.

NO IMPACT MAN

Colin Beavan, Farrar, Straus and Giroux, New York, NY, 2009, 258 pages, $25 hardcover, $15 softcover, $9.99 kindle.

It's one thing to commit to sustainability, it is another thing entirely to live it and live it to such an extent that "you leave only footprints and take only photographs." But that's what Colin Beavan did when he undertook an experiment with his family to live so sustainably so as to leave no impact. What is no impact? Simply put, it's no trash; but there's more to it, and that's what's interesting, and humorous.

No Impact Man is a book about a one-year experiment for three people, living in the Greenwich Village area of Manhattan (that's New York City, not the Little Apple in Kansas.) Imagine trying to live off the grid and not generate any trash in Kansas? It's pretty difficult. Now imagine trying to do it in a city with 7 million other people; it's not easy. But that's what Beavan, a keynote speaker at the April 2012 Smart and Sustainable Campuses Conference, did.

This narrative, a summary of events, blog posts, and philosophical musings,

addresses many aspects of normal living that we have all taken for granted. For facility officers, much of what is discussed is not new or surprising; we're not the target audience. The audience is more likely the casual environmentalist who thinks they're being sustainable when they bring a recyclable shopping bag to the store and load it up with packaged goods, including organic bulk items.

While we have intoned the mantra of "reduce, reuse, recycle" for years, we still seem to have trouble being sustainable, and Beavan discusses why that is, as he gradually approaches absolute zero environmental impact. In *No Impact Man* we learn occasional facts about the U.S. annual per capita waste, water consumption, energy consumption, CO_2 emissions, etc. We learn how Beavan studied how these numbers are generated (not from a statistical perspective but from daily living) and how he went about eliminating the source to truly become a *No Impact Man*.

Of course, this is not a one-person effort or adventure. The reality of the situation, unless you're Thoreau, is that we live with others, and must reduce our individual impact with their involvement. Beavan does so with his wife and 18-month old daughter, gaining the perspective of their reactions and responses. There are diapers, paper products (towels, tissues, and toilet paper), food containers, vehicles, and so on. Each of these is eliminated if it contributes to environmental degradation (pardon me while I limit my use of "impact" because I think it's an overused word) or greenhouse gas enhancement.

I selected this book because it is my university's annual reading for incorporation in academic programs. While not mandated by our provost, I'm going to teach a course in facilities management, and it seemed like a good way to get in the academic spirit. It's an enjoyable book with some humorous passages. Hey, avoiding trash generation isn't easy or pretty. It is also clear that to become more sustainable, our society must change; real change not "greenwashing." We have to stop buying, using, and disposing even if it does include recycling.

I foresee some interesting discussions this fall, and hope to share them with readers sometime next year. In the meantime, borrow or share this book with a friend (avoid environmental impact).

Ted Weidner is senior director of project management and construction at Purdue University, West Lafayette, IN, and can be reached at *tjweidne@purdue.edu*.

Compiled by Gerry Van Treeck

Armchem International introduces a new and improved version of its best-selling Dumpster Fresh®, a granular molecular odor suppressant that works instantly to neutralize and absorb odors. The new formula is stronger and more concentrated, so you need less, and it works faster. The versatile product can be used both indoors and outdoors in dumpsters, trash receptacles, compactors, locker and laundry rooms, sand urns, and more. This long-lasting deodorant kills odors without masking them and requires no scrubbing; just a quick sprinkle and odors surrender. The environmentally friendly product is non-toxic, non-flammable, and non-caustic. For more information contact Armchem International at *www.armchem.com*.

Scranton Products has unveiled two new hardware collections for the Hiny Hiders® brand of partitions, joining its current standard hardware. These collections are aesthetically pleasing and offer upscale design options, with the same strength and support as Scranton Products' current lines of hardware featuring Stirrup Brackets (8-inch wrap around) or Continuous Brackets. The Stealth Hardware Collection features a modern, minimalist design approach, and the Regal Hardware Collection features bold and modern design elements. Scranton Products' new hardware collections are as beautiful as they are strong and functional. Look for the new hardware options on the recently redesigned Scranton Products website at *www.scrantonproducts.com*.

Jenny Products, Inc. offers the GT-Series, the company's smallest line of electric-powered, two-stage air compressors. Featuring high-pressure output, the GT-Series is ruggedly built for professional use. The line consists of four models with 8-, 15-, 17-, and 30-gallon tanks. All units produce 15.5 CFM at 100 PSI or 15.2 CFM at 175 PSI. They're driven by commercial-grade, 5-horsepower electric motors, which operate from a 230-volt, single-phase power source. Standard features include powder-coated air tanks and heavy-duty cast-iron compressor pumps. A directional air shroud, finned intercooler and large flywheel keep pump temperatures low and assist in start-up. To learn more about Jenny Products, Inc. visit *www.jennyproductsinc.com*.

KH Industries now manufacturers White Retractable Power Cord Reels. Featuring all steel construction with white powder coat finish, the RTB White Cord Reels include 12/3 SJOW or 12/3 SEOW white power cable to deliver 20 A of service while providing unobtrusive temporary power solution. Units are NEMA 4 listed for indoor, outdoor, and wet location use and have 30 A/600 V rated slip ring. Available with cord lengths of 25, 35, and 50 feet, reels include adjustable ball stop, positive lock ratchet, and formed steel mounting base. For more information regarding KH Industries visit their website at *www.khindustries.com*.

Schweitzer Engineering Laboratories, Inc. has introduced two new wireless serial adapters the SEL-2924 and the SEL-2925 BLUETOOTH. Both serial adapters provide secure wireless links to remote laptops and smart phones, reducing exposure to harsh and dangerous environments for technicians and engineers. By installing a wireless SEL serial adapter on a serial port, personnel can communicate exactly as if they were connected with a serial cable. They avoid having to

enter a hazardous or crowded area, suiting up in arc-flash protective clothing, diverting traffic, or introducing tripping hazards. Both serial adapters are always secure from cyber intrusion, using BLUETOOTH v2.1 + EDR security, and require an 8- to 16-character encryption PIN. For additional information contact Schweitzer Engineering Laboratories, Inc. at *www.selinc.com*.

Lochinvar, LLC continues to expand upon its offering of commercial solar thermal systems by introcuding their new Thermal-Stor™ Stratified Solar Thermal Storage Tank. Designed to offer an ideal solution for solar thermal and ground source applications with an emphasis on hydronic space heating, the multi-functional Thermal-Stor operates as a storage tank and hydronic buffer tank while solely occupying the space of a single unit. Thermal-Stor uses the natural buoyancy of heated water to efficiently layer the temperatures in the tank, maximizing heat transfer capability of the renewable energy source and hydronic space heating system. Energy from a solar thermal system or ground source heat pump is transferred to the storage vessel through a spherical heat exchanger. As renewable energy is added, the stored water follows the laws of physics and stratifies within the tank—as heat is added, the hot water rises to the top, and the cooler water settles at the bottom. For more information about Lochinvar, LLC visit *www.lochinvar.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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