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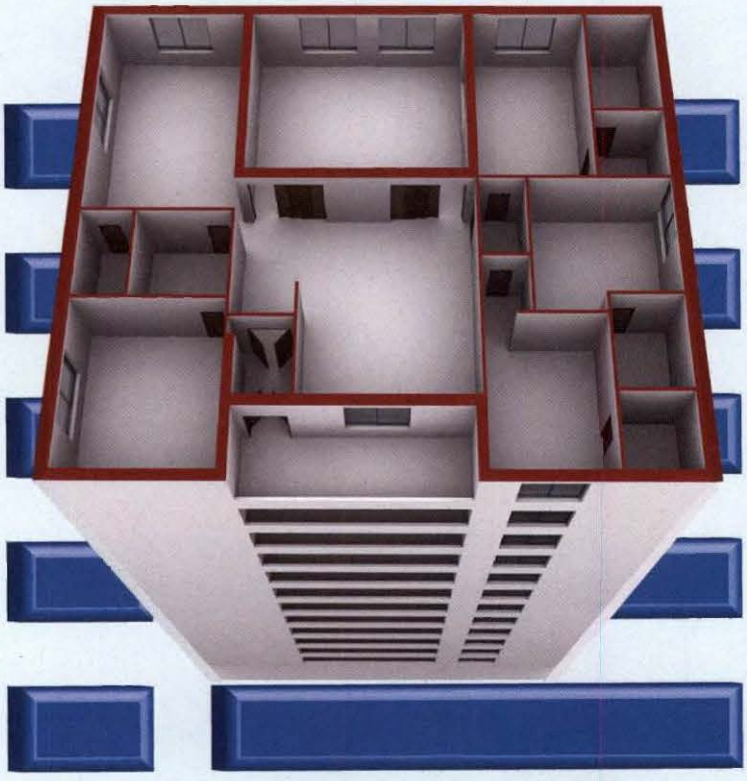

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features
NOVEMBER/DECEMBER 2012
VOLUME 28 • Number 6

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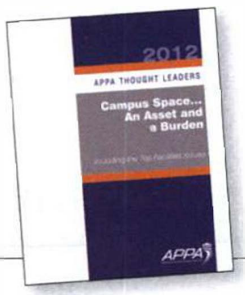

CFaR | Center for Facilities Research

columns

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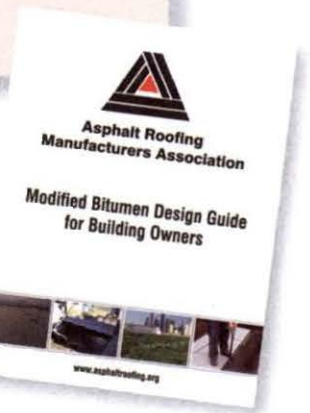

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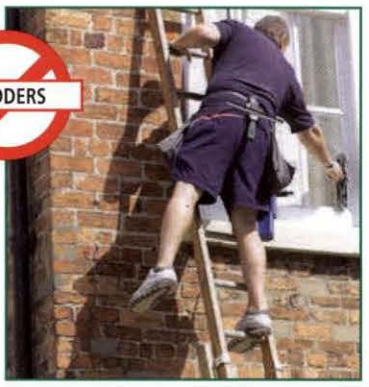

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READERSHIP SURVEY SHOWS STRONG SUPPORT FOR *FACILITIES MANAGER*

Thank you to everyone who participated in the 2012 *Facilities Manager* Readership Survey. We received a healthy return of 612 completed surveys, which reflects a 13.4 percent response rate. These numbers are good, but are down from the last readership survey conducted in early 2008, before the economic recession hit. Throughout the survey responses we found evidence of members and readers having far less time to read any publication in any depth, but that the perceived value of *Facilities Manager* remained at a high level.

The typical reader of *Facilities Manager* is a seasoned facilities professional, with a median age of 54 years and a median of nine years of experience in their current positions. Overall, 9 percent are 40 or under, 27 percent are 41-50, 57 percent are 51-64, and 7 percent are 65 or older.

These are just some of the findings of the final 2012 report to APPA by an independent research firm commissioned to assess the value of *Facilities Manager* to our members and other readers. According to the report, "*Facilities Manager* is well-read and valued by its audience.... They consider the magazine useful to their work and of high quality. In fact, significant portions consider it 'must reading' and have adopted processes they've read about in the publication."

The magazine's reach goes far beyond the APPA members and subscribers who regularly read *Facilities Manager*. The magazine has a passalong rate of 2.2, bringing the total number of readers of the physical magazine to more than 16,000. In addition, more members are accessing the online magazine file and PDF articles than they have in the past. Readers like the physical magazine and want to complement it with more digital offerings for smartphones and tablets.

THE TOPICS YOU WANT

According to the survey findings, most readers agree that *Facilities Manager* covers key topics at the right level and that we provide a good balance of content. About two-thirds of the readers want to see more coverage of best practices, more research-based articles, and less personal opinion.

The top five broad topics on which readers want to see more coverage are New Technologies, Leadership, Benchmarking/Key Indicators, Evaluation and Assessment, and Deferred Capital Renewal/Modernization. In reviewing the regular and occasional columns presented in the magazine, readers told us that their most-read and popular columns are Facilities Digest, Facility Asset Management, Knowledge Builders, Executive Summary, and New Products.

Finally, we had asked readers to rate the magazine in comparison to other regularly read industry and association publications. We were pleased to see that 81 percent of you indicated that *Facilities Manager* is the most useful publication in a crowded market of facilities-related publications.

We thank all of you for your continued support of APPA and of *Facilities Manager*, and we look forward to serving you further as your association, and publication, of choice.

Coming in Jan/Feb 2013

- Campus Facilities Evaluation
- Facilities Condition Assessment A to Z
- 2012 APPA Regional Conference Reports

FACILITIES manager

President
Mary S. Vosevich, University of New Mexico

Executive Vice President
E. Lander Medlin, *lander@appa.org*

Editor
Steve Glazner, *steve@appa.org*

Managing Editor
Anita Dosik, *anita@appa.org*

Design & Production
www.touch3.com

Printing
Corporate Press, Inc.

Editorial Office
703-684-1446 ext. 237
Fax: 703-549-2772

Advertising
Gerry Van Treeck, 847-562-8633
gvtgvt@earthlink.net

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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*.

26th Annual Campus Energy Conference
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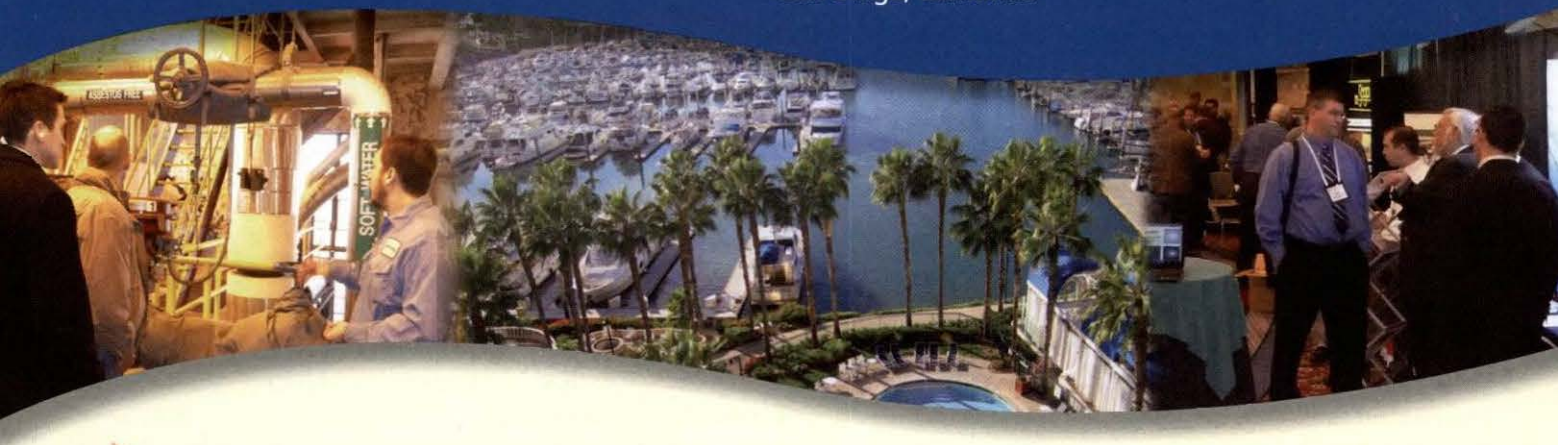

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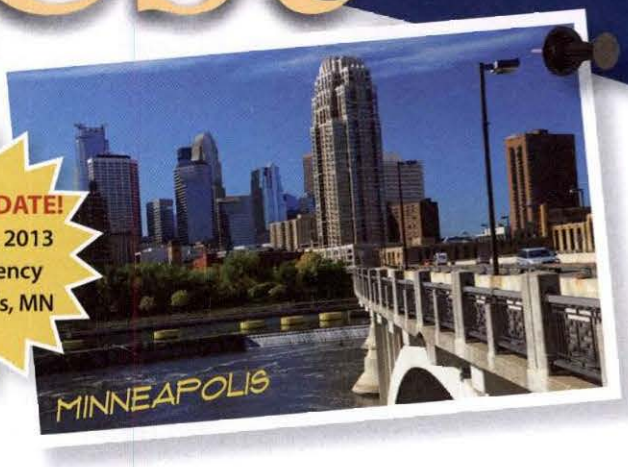
By Anita Dosik



APPA 2012 PROCEEDINGS AND PHOTOS NOW AVAILABLE

You can now access proceedings from APPA 2012 online. Session overviews include highlights from:

- Achieving Energy Reductions Over and Above Building Efficiencies By Employing Energy Conservation Through Behavior Change
- An Innovative Approach to Addressing Facilities Planning, Real Estate, and Land Usage Challenges
- An Ounce of Prevention is Worth a Pound of Cure—How to Show the Financial Impact of a Preventive Maintenance Program

Access the proceedings here: *http://appa.org/training/APPA2012/Proceedings.cfm.*

You can also view photos from the conference at *http://appa2012denver.shutterfly.com/.*

SEE YOU IN MINNEAPOLIS IN 2013!

Mark your calendars now to join us this August 2-4 at the "City of Lakes"—Minneapolis, Minnesota. Once the world's flour milling capital and a hub for timber, today Minneapolis serves as the primary business center between Chicago and Seattle, containing the fifth highest concentration of Fortune 500 companies. APPA 2013 will be a major go-to event, offering career enrichment and advancement, a chance to discuss current topics with other thought leaders in educational facilities community, and much more. Plan now to attend APPA 2013 August 2-4 at the Hyatt Regency in Minneapolis, Minnesota. Registration will open in December. In addition, the SFO Summit will take place on August 1.

APPA 2013 CALL FOR PAPERS: SUBMISSION DEADLINE IS NOVEMBER 26, 2012

APPA invites you to submit a program presenting solutions for improvement, sharing of best practices, or innovative approaches relevant to facilities professionals throughout the educational community. The APPA 2013 annual meeting offers an opportunity for you to be part of the outstanding professional development offering to participate in discussions, and share effective strategies to the many challenges facing facilities professionals.

Proposals will be selected to provide a program that offers innovative, comprehensive and diverse treatment of issues facing facilities professionals throughout the educational community—colleges, universities, community colleges, and K-12. Topic areas to be addressed are:

- Alternative Funding
- Codes/Safety/Risk Management
- Communication (e.g., Social Media, Customer Service, etc.)
- Disaster Preparedness
- Energy Management
- Finance/Funding
- Leadership
- Space Management
- Succession Planning
- Sustainability
- Workforce Management

Proposals are being accepted for 60-minute concurrent sessions. Programming will occur Friday, August 2, through Sunday, August 4, 2013. Six to eight educational sessions will run concurrently in two to three time slots per day.

Guidelines for Submissions can be found at *http://www.appa.org/training/APPA2013/conferencehighlights.cfm.* Here are a few key considerations as you prepare your proposal:

- Submission of program abstract with title in a format of a 5-7 sentence description;
- Submission of 4 learning outcomes;
- Submission of complete contact information for each potential presenter to include full name, title, institution or company, phone, e-mail address, and a 10-sentence biographical introduction; and
- Submissions from business partners should include a partnering with an educational entity.

Submissions can be made by e-mail to *callforprograms@appa.org.* Submissions will not be accepted if the above items are not included. If you have questions, contact Suzanne Healy, director of professional development, at *suzanne@appa.org* or 703-542-3833.

APPA U

SAVE THE DATE!
January 13–17, 2013
Marriott Tampa Waterside
Tampa, FL

APPA U is a twice-yearly professional development program that brings together the Institute for Facilities Management and Leadership Academy in one location—and it is a networking opportunity like no other!

APPA U also offers programming based on regional need—such as the Supervisor's Toolkit or Drive-In Workshops – that cover hot topics in our field. APPA U will also provide a forum for the foundational credentialing programs—Certified Educational Facilities Professional (CEFP) and Educational Facilities Professional (EFP). The goal of APPA U is to expose facilities professionals to the vast offerings that can be found through APPA.

Feel free to contact the APPA Professional Development staff at *education@appa.org* any time with questions as you prepare to join us this January!

EVENTS

APPA EVENTS

Dec 10-14, 2012, Supervisor's Toolkit, *Clemson, SC*

Jan 4, 2013 Credentialing Prep Course (CEFP + EFP), *Philadelphia, PA*

Jan 13-17, 2013 APPA U: Institute for Facilities Management, *Tampa, FL*

Jan 13-17, 2013 APPA U: Leadership Academy, *Tampa, FL*

Jan 18, 2013 Credentialing Prep Course (CEFP + EFP), *Tampa, FL*

Apr 15-16, 2013 Smart and Sustainable Campuses Conference, *Bethesda, MD*

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

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

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

APPA ANNOUNCES THE APPA APP ON ANDROID!

The APPA App provides you with quick and easy access to stay in touch with APPA wherever you go. The APPA App is available for Android and is also available in a Web browser format for use on other communications devices.

Use the APPA App to:

- Identify upcoming APPA conferences.
- Access to training sessions and Drive-In Workshops.
- Easily contact APPA leaders, officers, volunteer officers, and APPA staff members who can assist you with your questions.
- Find information on APPA's many services and products.

The instructions for accessing the APPA App are as follows:

- Using your Smart Phone (Android Operating System), visit the Google Play store download page for the APPA App: *https://play.google.com/store/apps/details?id=com.appa.appa*
- Click the "Install" button.

Note: You must have a Google user account to install applications from the Google Play Store.

View the APPA App Demonstration, presented by Kunal Chitre, Digital Energy Inc, on the APPA YouTube channel at *www.youtube.com/watch?v=f2uhuicq3uQ+feature=plcp*

- Introducing the APPA App on Android *http://www.youtube.com/watch?v=cu2JfHVeMUs*
- How to DOWNLOAD the APPA APP *http://www.youtube.com/watch?v=cu2JfHVeMUs*

NEW OKLAHOMA CHAPTER FINALIZED

The Oklahoma Association of College and University Physical Plant Administrators (OACUPPA Inc.) is now an affiliated chapter of APPA. The affiliation was finalized on October 5, 2012 at the OACUPPA annual meeting. For more information, contact Sue-Anna Miller (president) at *sue-anna@ou.edu.*

OACUPPA
Oklahoma Chapter of APPA

New officers, from left: Cyndi Byars, Secretary/Treasurer (University of Oklahoma); Adrian Self, Vice President (Oklahoma State University); Rick Krysiak (Oklahoma State University); Chris Snow, Membership (Oklahoma City Community College); Sue-Anna Miller, President (University of Oklahoma).

facilities digest

APPA 2013 AWARDS NOMINATIONS NOW OPEN

Deadline for Nominations is January 31, 2013

Nominations are now being accepted for the following APPA 2013 institutional and individual awards:

- Award for Excellence
- Sustainability Award
- Effective and Innovative Practices Award

(For questions contact your regional representative for Professional Affairs at *http://www.appa.org/committees/professionalAffairs.cfm.*)

- Meritorious Service Award
- Pacesetter Award
- APPA Fellow

(For questions contact your regional representative for Awards and Recognition at *http://www.appa.org/committees/awardsRecognition.cfm.*)

The deadline for consideration for the 2013 awards is January 31, 2013. Visit *www.appa.org/recognition/* for award details and online nominations forms.

If you have questions about the award process, contact Christina Hills at *christina@appa.org.*

BECOME AN APPA ELECTED OFFICER: NOMINATIONS FOR 2013 NOW OPEN

APPA's strong and steady volunteer leadership is one of the core forces making it the "association of choice" for educational facilities professionals. Consider becoming a candidate for an elected APPA officer.

Elected officers gain enormous leadership skills and a chance to develop professionally in many meaningful ways, as it provides a major opportunity to give back to the entire profession. Being an APPA elected official does require a personal commitment of time and energy. However, past elected officers will tell you the personal rewards and professional benefits outweigh the costs of engagement and time commitments. There are five elected officer leadership positions. Consider nominating yourself—or others—for the one that best matches your passion and areas of expertise. Learn more at *www.appa.org/board/electedofficers.cfm.*

All applications and nominations for APPA office are due no later than December 15, 2012.

NEW PUBLICATIONS AVAILABLE AT APPA'S BOOKSTORE!

2012 Thought Leaders Report (PDF)

Published by APPA, *Campus Space...An Asset and a Burden* is the newest publication in the Thought Leaders Series. The report first presents a set of beliefs, issues, and attitudes that are preventing effective space management on many college and university campuses, then identifies and provides extensive discussion of six top issues relating to space in higher education, along with critical questions for institutional dialogue and key strategies to address these issues.

The Thought Leaders report is the result of a facilitated discussion among nearly 40 campus administrators (including university presidents, business officers, and senior vice presidents), higher education experts, and consultants. The 2012 report is produced under the auspices of APPA's Center for Facilities Research (CFaR) and was sponsored by DTZ, a UGL company, and Jacobs. (TLS12)

Free Member/$15 Nonmember

The Facilities Committee

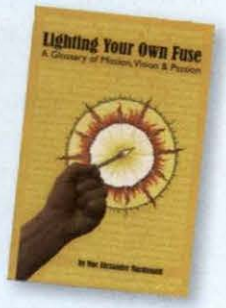
By Harvey H. Kaiser

Facilities committees help shape the physical character of their institutions by ensuring that their campuses are functional, attractive, and well maintained. In *The Facilities Committee*, author Harvey H. Kaiser explains how facilities committees can help develop effective facilities policies and practices and ensure that the necessary infrastructure is in place for academic, residential, extracurricular, and co-curricular programs and services. (F341)

$20 Member/$25 Nonmember

Lighting Your Own Fuse: A Glossary of Mission, Vision & Passion

By Mac Alexander Macdonald



This powerful new book benefits all personnel in an organization regardless of their leadership position. Discussing the fear caused by tightened budgets, the anxiety surrounding the need to pick up new computer or technological skills, or simply the need to maintain a high level of trust and constant willful communication, *Lighting Your Own Fuse* addresses an entire gamut of subjects that pertain to our world. (F340)

$18.50 Member / $25 Nonmember

These and many other publications are available at *www.appa.org/bookstore*

The Best Days are Ahead

By David Gray

I am writing this not from the standpoint of the Immediate Past President of APPA International, but instead as a facilities officer who wants to make a great institution even better—in some way—everyday. That has been my goal for the past 18 years, and that is still my goal for my remaining years at Middle Tennessee State University.

And while I cannot say that I achieve that goal each and every day, I can look back on the drastic growth and positive changes at my own university and know that our facilities services organization has provided numerous services that have contributed to and enhanced the success of the university. As I reflect on this past, I am reminded that past successes are no guarantee of the future success.

Now is the time for facilities officers in general, and APPA members in particular, to look forward. Our best days should be ahead of us. I encourage you to plan for success as you look forward in your own career and to your service to your institution and community. I also want to offer you some thoughts about what success might look like.

- *First, success has to be long term.* There is a great temptation to incorporate short-term solutions in response to the physical and fiscal challenges we force on our campuses. While often rooted in financial constraints, this thinking is particularly tempting for the increasing numbers of us who could retire sooner rather than later.

  We have all dealt with legacy issues of all types on our campus—to the best extent possible. Don't kick the can down the road; encourage others to think long term as well. Winston Churchill once said, "There are two kinds of success—Initial and Ultimate —long-term—Success." It's about tomorrow.
- *Second, success in facilities must reflect as success for the institution.* Facilities Management has always been a support enterprise. We design and construct buildings – then we maintain and operate them to be safe, clean, and functional for others to use. Then we redesign and renovate buildings to accommodate program changes. It's about the institution.
- *Finally, success at our institution is a team sport.*

NOW IS THE TIME FOR FACILITIES OFFICERS IN GENERAL, AND APPA MEMBERS IN PARTICULAR, TO LOOK FORWARD.

George W. Cane once said, "There is no future in any job. The future lies in you—who have the job."

It's about the people.

David Gray is assistant vice president, facilities services, at Middle Tennessee State University, Murfreesboro, TN, and also APPA's Immediate Past President. This article was adapted from Gray's speech to the APPA membership at the APPA 2012 conference last July in Denver. He can be reached at *david.gray@mtsu.edu.*

Leading for the Future

By E. Lander Medlin

The world is changing dramatically, and at a phenomenally rapid pace. The time compression of change is dynamic and complex with even greater consequences imposed by an increasingly interdependent world. Such is the pace of decision making, with its corresponding impact on the leadership skills we must master to thrive in the unpredictable, uncertain, yet opportunity-filled years ahead.

Bob Johansen's book, *Leaders Make the Future: Ten New Leadership Skills for an Uncertain World*, provides a forecast for the future, the leadership skills needed (and why they matter,) and how they are interconnected. In the book, he describes a "VUCA" world (a military-based acronym that stands for volatility, uncertainty, complexity, and ambiguity.) This lens focuses on the external future forces that will shape leadership over the next decade.

These skills are not intended to replace existing leadership models, but instead to challenge and stretch them. The book demonstrates the importance of learning to listen for future "patterns" to make decisions in the present that will positively impact our organizations' future. Novelist William Gibson said, "The future is already here—it's just unevenly distributed." The challenge is to find the best way to experience and learn from that unevenly distributed future. A synopsis of Johansen's 10 Future Leadership Skills follows:

1. **Maker Instinct**—"*Ability to exploit your inner drive to build and grow things, as well as connect with others in making.*"
   The best leaders have always been tinkerers who imagine alternative structures to see what new things they can create. Using new amazing tools and network connectivity, you can build profoundly different constructs and organizations.
2. **Clarity**—"*Leaders must be clear about what they are making but flexible about how it gets made.*"
   They find viable directions in the midst of confusion, and see hope on the other side of trouble. While tempering certainty, clarity wraps a leader's vision in practical but inspirational language that motivates people through the chaos.
3. **Dilemma Flipping**—"*Ability to turn dilemmas—which, unlike problems, cannot be solved—into advantages and opportunities.*"
   This type of mind reset requires reimagining the seemingly unsolvable challenge as an opportunity, threat--or both. And, putting together a viable strategy by perceiving the challenge in different ways through other, non-traditional lenses. The trick is to engage constructively in the tension between opposing ideas, and not be forced into a premature choice or resolution. You live with uncertainty for a while, then, decide how to form the future.
4. **Immersive Learning Ability**—"*Ability to immerse yourself in unfamiliar environments to learn from them in a first-person way.*"
   Meaning, complete engagement in that world that is different from your own, while remaining open minded to the experience. You should feel uncomfortable, yet in constructive ways, during the process of learning from such an immersion activity. Immersive learning provides a safe environment within which to practice active attention, the ability to listen and filter, and to see patterns while staying centered – even when overwhelmed with stimuli.
5. **Bio-Empathy**—"*Ability to see things from nature's point of view; to understand, respect, and learn from its patterns.*"
   The next big wave of change will grow from biological and organic ways of thinking. Bio-empathy is grounded in an ability to empathize with nature and understand its ways, its connectivity, and its resilience. The attempt by leaders to learn from the natural cycles; to see the big picture of ecological systems; hence, the concept of sustainability is personified.
6. **Constructive Depolarizing**—"*Ability to calm tense situations where differences dominate and communication has broken down—and bring people from divergent cultures toward positive engagement.*"
   Constructive Depolarizing applies to the conflict resident in dilemmas from all sorts of diversity. It begins with making calm since conflict is rarely an either/or choice. Reverse mentoring represents a simple but powerful strategy for bridging polarities.

7. **Quiet Transparency**—*"Ability to be open and authentic about what matters--without being overly self-promoting."*
   Open-source thinking will be a fundamental driver of change in the future, and it will add to and complicate the move toward transparency. It implies that if you give ideas away, you will get even better ideas back in return. This will raise the bar for competition to greater cooperation (maybe what could be called "coopetition.") It begins with humility, requiring us to be open, self-effacing, resilient, a good listener, and authentic, which ultimately inspires credibility and trust. Humble strength will be the best leadership profile for the future.
8. **Rapid Prototyping**—*"Ability to create quick early versions of innovations, with the expectation that later success will require early failures."*
   This skill centers on a trial-and-error mentality by starting quickly and learning continuously; emphasizing experience in the field, rather than advance planning; and putting the priority on extreme speed in learning. We must expect to fail early in the process, so we can succeed later on.
9. **Smart-Mob Organizing**—*"Ability to create, engage with, and nurture purposeful business or social change networks through intelligent use of electronic and other media."*
   It brings together large groups for a common purpose, making savvy use of available media, which amplifies their collective intelligence for greater impact. Leaders will need to develop their online presence and leadership styles, as '"in-person" leadership will not be enough.
10. **Commons Creating**—*"Ability to seed, nurture, and grow shared assets that can benefit all players—and allow competition at a higher level."*
    New commons are shared resources grown out of connectivity and employ a win-win logic, so that multiple parties win. Future leaders will be called to create new commons, to grow new places within which collaboration and mutual success can occur for the greater good/benefit of all.

These ten future leadership skills build from individual instinct into collective action, to make the world a better place. They will be basic to successful leadership in a "make-it-ourselves" future.

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

Membership: It is Really Everyone's Responsibility

By Lisa Potter

As the new interim membership committee chair of Rocky Mountain APPA, I have taken the opportunity to learn more about how one becomes an APPA member, and the advantages of joining a regional chapter. I found that joining APPA is actually easy to do. All the regions have links to APPA and membership from their websites. And the advantages were clearly listed on the APPA website. So I thought, why can't we get more members? Who wouldn't want to utilize these benefits?

Unfortunately, what I am finding is that we may not promote APPA and our regional chapters enough to other institutions, community colleges, and K-12s that are not currently members of APPA. Many of these institutions are not familiar with APPA or what APPA has to offer.

Another issue I found surprising is that we do not always promote the additional opportunities for membership within our own chapters and regions, nor do we do a great job informing others in our departments that our institution is a member of APPA.

WHAT DO I HOPE TO ACCOMPLISH?

Increased membership, of course! Membership has to start with us, the leaders of our profession and those already involved in APPA and our regions. To make this happen, we have to become better communicators in promoting all the wonderful opportunities that APPA provides. We all need to reach out to our colleagues at other institutions, including community colleges and K-12s. Just a few minutes of our time could make a difference to someone else in our profession—you could make that difference.

Take the time to send an e-mail introducing yourself and what APPA has to offer, then follow with a phone call make it more personal. If we each took 10 to 20 minutes a month from our busy schedules to send a few e-mails—or better yet, make a few phone calls—we could potentially help APPA and our regional memberships grow. This, in return, provides us and our colleagues more networking prospects.

Consider hosting a Drive-In Workshop—use these as an opening to invite non-members to an APPA professional development session at no cost. These settings are excellent for discussing APPA and its benefits; show them first-hand all the networking among the attendees. Keep the roster and follow up to recruit from these registrants later.

Next, we have to encourage our staff to become more involved in APPA by starting with their region chapters, and ensure that they understand all the opportunities that are available to them through APPA.

We also should try to recruit more members from our own institutions by promoting the high quality of courses and publications. I'm sure we each have a few rising stars that would welcome the experience. A few great ways to get started are by hosting a Drive-In Workshop and/or a Supervisor's Toolkit session. Your staff can become involved with setting these up and can attend—it's a great introduction.

WHAT CAN YOU DO?

You can help with recruitment:

- Call other schools in your region or state and ask them to join APPA and your region or local chapter.
- Start out with trying to recruit just one

school a year. If each of us could get just one school/person to join a year, we could double our membership.

- If you can reach out to just one institution a month, think of what we can collectively do to get the word out about APPA. Imagine the increase in membership we could gain this way.
- Promote the benefits of networking. We attend the Institute for Facilities Management, the Leadership Academy, the annual conference, and our regional chapter annual meetings. There, we are introduced to hundreds of our peers and colleagues. We collect names and contacts, building relationships through these events. Here's a good quote: "The key for success isn't knowing everything there is to know, the key to success it having the phone numbers of those who know parts of it."

It is almost impossible to know everything; however as a professional we know we can learn from our colleagues. Through our APPA introductions, we find others that have experienced similar issues, concerns, and challenges. And, we can reach out to them to seek their advice, share ideas and experiences and find the answers. We understand each other, and this allows us to make quick e-mails or phone calls to get information and ideas. We can build upon what they have learned and "network plagiarize" from each other. Why reinvent the wheel, when we can borrow from others? We can also use the information we garner for a quick analysis of our deficiencies—and best of all—to measure our successes.

- Host a Drive-In Workshop.
- Host a Supervisor's Toolkit course, and invite other institutions to attend.
- Enlighten others on the benefits of professional development for themselves and for their team. Remind them that it is essential to invest in staff, to nurture their talents, and build on their strengths. This is how we all become self-confident, build self-esteem, and become self-assured. We then exhibit and lead by example.
- Be an advocate of training budgets! Remind your upper management that training is not just a frill to be cut from budgets when times are lean. It is an essential component of strategic improvement to achieve our missions and goals, and to keep staff engaged in our endeavors.
- Keep your upper management informed and aware of APPA. Get them involved or to attend APPA events. Remind them that APPA is one of the only well-rounded programs for educational facilities professionals.
- Get your future leaders/rising stars involved with APPA. By investing in them, we enable them to become better communicators and able to support and communicate our visions, needed changes, and the goals we all develop for our organizations.
- Recruit additional members from your own institutions. Staff members in your work units, others within your department. Recruit from other departments on campus (i.e., housing, athletics, library, museum), and don't forget about our students interested in the field.

Membership in APPA is a unique opportunity that allows us to demonstrate our excellence in service, leadership, and character. And, it provides us with the opportunity to learn.

Now let's get out there and let others know all about it!

Lisa Potter is assistant director facilities operations at the University of Colorado Boulder and can be reached at *lisa.potter@colorado.edu.*

It's About the Institution: Finding that Olympic Spirit in Facilities Management

By Joe Whitefield

By now, the 2012 Summer Olympics are a memory. Looking back, it is easy to recall so many wonderful accomplishments and memorable moments. Few events can match the Olympics for compelling storylines of great athletic achievement, personal triumph, and human interest—and London 2012 did not disappoint. There were countries racking up large numbers of medals and some countries winning their first ever. There were Olympic and world records and some non-medal performances that were every bit as awesome and inspiring.

For me, some of the great scenes in every Olympics are the medal ceremonies. In particular, the emotion displayed by the gold medal winning athletes as their national anthem is being played is gripping. I imagine many of them are trying to manage a cocktail of intense feelings of honor, satisfaction, and relief for their individual achievement combined with pride in representing their country on an international stage.

There are even those occasional athletes that are successful in their sport apart from the Olympics with questionable attitudes who demonstrate a transformation of personality when they are playing for their country instead of for the money. Indeed, there must be something powerful about playing for the name of the front of the jersey instead of the name on the back.

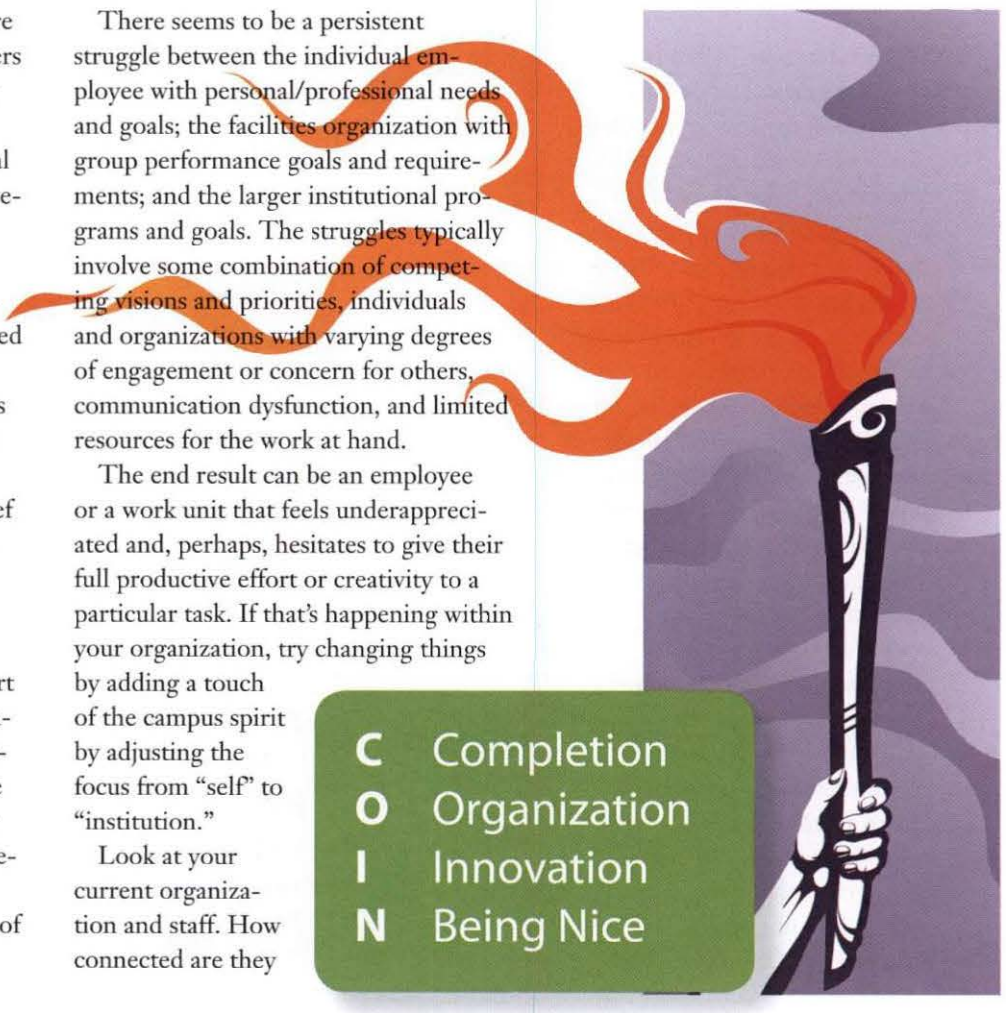
BRINGING OUT THE BEST

When it comes to individual performance in a team environment, facilities managers could probably learn from the Olympic experience. Bringing out the best in the people within our organizations is a continuous challenge for most of us.

There seems to be a persistent struggle between the individual employee with personal/professional needs and goals; the facilities organization with group performance goals and requirements; and the larger institutional programs and goals. The struggles typically involve some combination of competing visions and priorities, individuals and organizations with varying degrees of engagement or concern for others, communication dysfunction, and limited resources for the work at hand.

The end result can be an employee or a work unit that feels underappreciated and, perhaps, hesitates to give their full productive effort or creativity to a particular task. If that's happening within your organization, try changing things by adding a touch of the campus spirit by adjusting the focus from "self" to "institution."

Look at your current organization and staff. How connected are they to the institution? How does the success of your efforts contribute to the overall success of the institutional endeavors they intend to support? It is easy to see the negative. When there is a breakdown of facilities services, everyone notices. It is harder, sometimes to see the positive.



A UNIQUE STEWARDSHIP

Facilities management has always been a support enterprise. We design and construct buildings. Then we maintain and operate them to be safe, clean, and functional—for others to use. That demands a unique sort of stewardship. Facilities services should be about more than providing the facilities and utilities that make academic, research, and athletic endeavors merely possible; they should make them successful.

Today's facilities management organizations do much more than keep the wires hot and the water cold. Our services in the facilities and on the grounds contribute directly to fundamental institutional goals like recruitment, retention, and reputation. And more and more often, we are becoming an integral part of the learning environment of the campus, particularly in the areas of energy and the environment.

It is important that educational institutions and their staff be recognized for the value they bring to an institution. However, before others will see facilities as contributors to their success—and not as service providers, they must first see themselves as contributors to their success. It can be as simple as the attitude from the familiar story of the three brick layers. When asked what they were doing, one said "laying bricks," another said "feeding my family," and the last one said "building a cathedral."

Like the cathedral builder, or an Olympic athlete, we must see ourselves as part of the bigger institution. We should define and communicate our work in those terms and give a worthy effort. And we should never forget to encourage our people continuously, and recognize success and improved performances when they occur.

Every four years I am left with the opinion that the magic of the Olympics is not found in the physical skills of the athletes, but rather in their hearts. How else can you process the extreme training regiments that these athletes endure? As one track athlete said, she trained six days a week for four years for a 15-second race. Personal commitment and national pride are a powerful combination.

When talented individuals are motivated to push themselves to beyond ordinary limits, truly extraordinary performances are produced. As facilities managers, we should try connecting the people within our organization to the larger mission of the institution and see what types of performances emerge. Let the medal counting begin.

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

Limit the Impact

Build only what you need

By Katie Karp

Economic downturn. Budget constraints. Cost of attendance. Campus infrastructure needs. Building to compete. For many colleges and universities, these phrases have become all too familiar over the last five years.

With today's economic challenges, educational institutions are finding themselves in constrained financial positions. They are struggling to continue academic or research programs and provide student support services while experiencing declining endowments, fluctuating enrollments, and federal and state funding shortages. Institutions manage these challenges in markedly different ways. Some are cautious and work to maintain their overall financial position. Others are concerned with preserving their debt capacity. Nearly all are wary of increasing the cost of student attendance.

With an increased need to compete for growing enrollments, institutions are consistently challenged to do more with less and struggle to balance today's financial shortfalls with the need to continue long-term planning, which includes enhancing campus infrastructure to support planned enrollment increases and "building to compete" in an effort to attract the best and brightest students.

Many institutions cannot afford to simply build new facilities to satisfy needs, let alone build space that they absolutely do not need, and this raises the question: When every square foot counts, how do you maximize your resources in order to limit the impact of future construction?

EXISTING FACILITIES MASTER PLAN

Many colleges and universities implement a campus master plan to support strategic goals over a span of 10 to 20 years. Nearly all campus plans focus on future growth, including, but not limited to, new construction, future land use, and potential land acquisition. Rightfully so.

Institutional master plans must also, however, take a more holistic and perhaps fundamental approach to master planning by critically assessing their existing campus facilities. A comprehensive, campus-wide analysis of current facility conditions, building use, and space programs can offer solutions to realize efficiencies in shared resources, as well as create opportunities to reconfigure space to accommodate future needs at a lower cost than new construction.

The major components of an existing facilities master plan should include the following:

1. Existing Conditions Analysis

An integral first step of any facilities master plan is conducting an existing conditions analysis of all campus facilities. This step is important for understanding the resources you currently have, how they are being utilized, and their overall condition. Once completed, this analysis should identify the potential uses of these facilities for the future.

Nearly all facilities managers have an ongoing tally of deferred maintenance for each campus building. Many are strategically planning for the pending "expiration date" of older facilities by developing replacement plans before the end of the building's useful life.

Conducting a facility conditions assessment for all campus buildings on a regular basis allows for the college or university

to strategically assess the extent of deferred maintenance and the associated costs. The institution can then conduct a cost/benefit analysis of remediating deferred maintenance versus extensive renovation or replacement.

Equally important is understanding how a facility is currently being utilized. Many facilities managers hold numerous records for any given building, including floor plans and the space program for the facility. However, as many institutional departments and/or divisions shift, reorganize, and expand to accommodate ever-changing needs, many managers alter their use of assigned space within a facility. It is important to update floor plans and space programs on a regular basis to ensure that the current use of a facility is reflected within these records.

When every square foot counts, how do you maximize your resources in order to limit the impact of future construction?

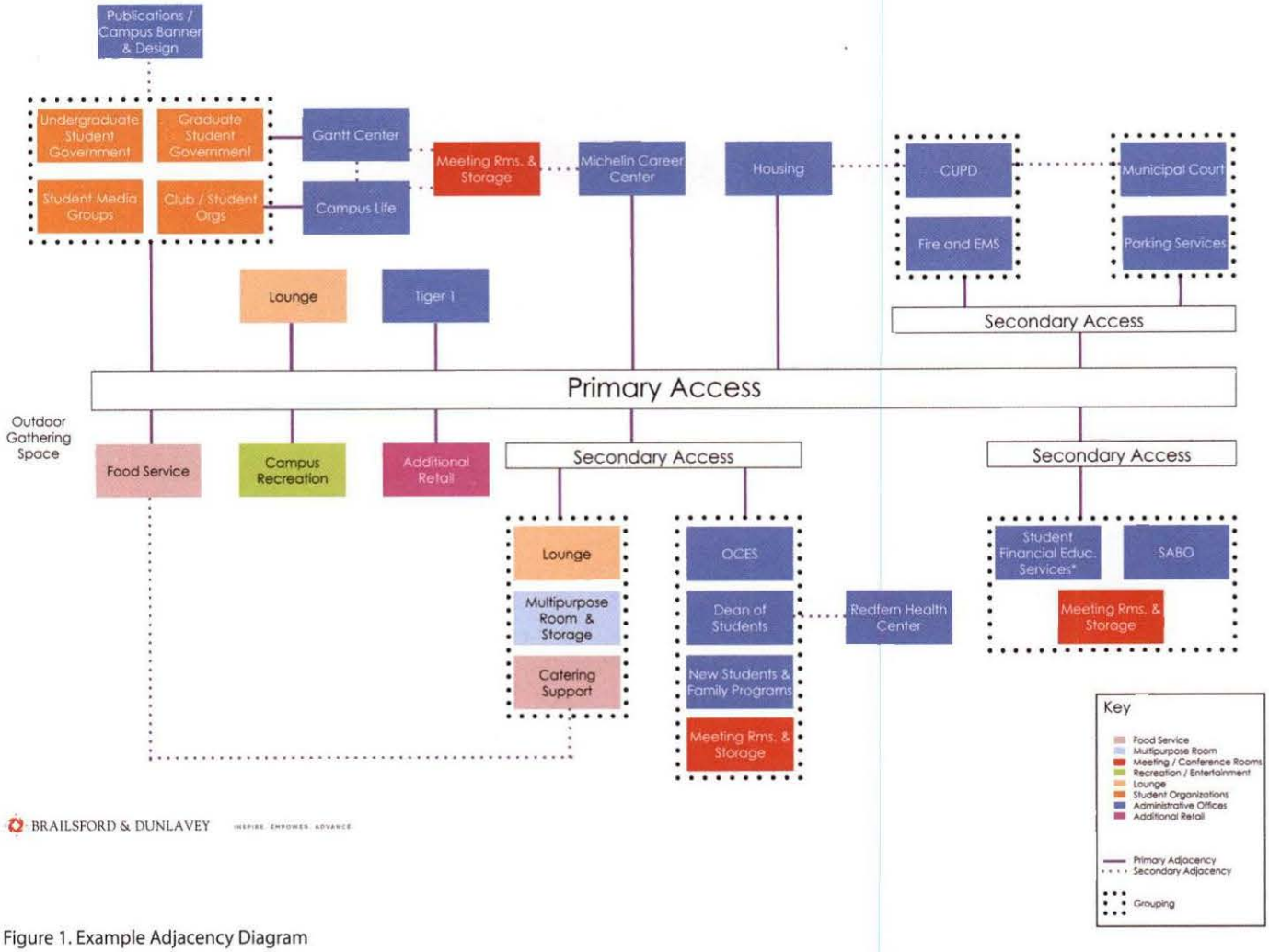


Figure 1. Example Adjacency Diagram

2. Existing Facilities Master Plan

With an extensive understanding of current facility conditions, the distribution of space programs by department and/or division can easily be quantified. However, understanding work flows, preferred adjacencies, potential efficiencies, current deficiencies, and future growth needs can only be learned by meeting with or surveying users of each area.

Gaining insight into departmental work flows will assist in identifying potential adjacencies that can ultimately create space efficiencies. Square footage that is recaptured through these efficiencies may assist in accommodating future growth for that area or can potentially satisfy the space needs of another area. For example, a financial aid department and student cashier/accounts department are typically a preferred adjacency within a college or university setting. The work flows of these two departments can intersect, depending on the structure of the departments.

By creating a physical adjacency between these areas, front-of-the-house efficiencies (i.e., shared lobby, shared student computer stations, etc.) can be realized and user convenience can be improved. The square footage recaptured through these efficiencies can accommodate back-of-the-house growth needs for either area, or can be reassigned to another department that is in need of additional space.

Standardizing the size of all administrative spaces (individual offices, work stations, entry lobbies, conference rooms, copy/work rooms, break areas, storage, etc.) throughout the facility–and ultimately the campus—will recapture a significant amount of square footage that can be reallocated to meet future growth needs. For example, simply establishing and implementing space standards for individual offices and work stations by faculty or staff position across campus facilities will limit the number of unique office spaces and recapture square footage that can offset future growth needs.

Within one facility, there can be numerous conference rooms, copy/work rooms, break areas, storage rooms, etc. Because many of these resources are internal to a department or division's office space, they are often duplicated or under-utilized, rather than shared among multiple areas. By moving these space types adjacent to the corridor, multiple departments may access and share them. For example, conference rooms needed by multiple administrative areas during regular work hours can be made available to student groups after hours. Creating multi-functional areas limits the need to replicate

these space types—even for different user groups—within new construction.

The bottom line: moderate renovation (i.e., moving walls) within existing facilities with limited deferred maintenance can realize efficiencies of space by creating adjacencies, standardizing administrative space, and creating shared resources. Moderate renovations of existing facilities will prove more cost effective than replicating this space within new construction.

3. Gap Analysis

As a part of the previous planning exercise, future space needs by department and/or division will be identified. Such needs may be accommodated through moderate renovation; however, some will likely need to be realized through strategic expansion or new construction.

By maximizing current resources through an existing facilities master plan, the institution will limit the impact of new construction and will not be building space it does not necessarily need.

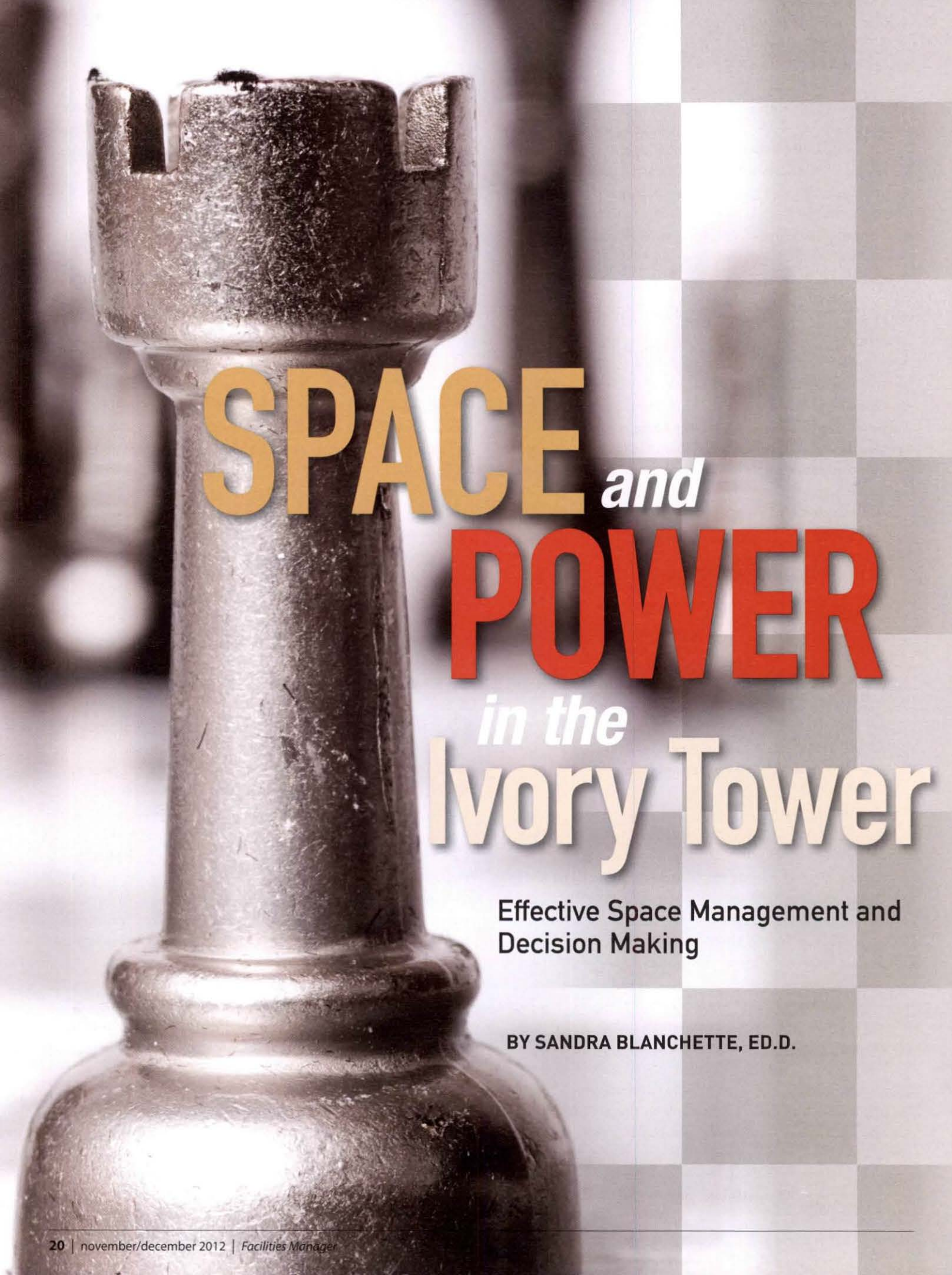
Continuing with the theme of the existing facilities master plan, it will be important to ensure that the space program for new construction applies the same space planning principles. New facility programs should always look to create efficiencies through physical adjacencies, standardize administrative space, and strategically locate shared resources within commonly accessible areas.

CONCLUSION

With the reality of today's financial constraints, it is important for colleges and universities to maximize the value of existing resources in order to minimize the impact of investing in new facilities. To maximize current assets, it is important to have a comprehensive understanding of existing facility conditions and current space use.

Taking a strategic approach to campus master planning and creating a master plan for existing facilities will allow an institution to make the most efficient use of its space needs through physical adjacencies, a standardized space plan, and shared resources. All such steps will limit space redundancies that may create an artificial demand for new construction.

Katie Karp is project manager at Brailsford & Dunlavey, a program management firm with in-house planning capabilities, based in Washington, DC. She can be reached at *kkarp@programmanagers.com*; this is her first article for *Facilities Manager*.



SPACE and POWER in the Ivory Tower

Effective Space Management and Decision Making

BY SANDRA BLANCHETTE, ED.D.

"In academics, space is everything," remarked a research professor reflecting on a 37-year career in higher education. Many institutions of higher education are confronted with campus-wide complaints of lack of space or inadequate space for classrooms, research, laboratories, offices, social interaction, and innovation. Further study indicates that many of the problems associated with space are related to inefficient use of space and cultural perceptions related to the meaning of space.

At a time when there are enormous economic pressures on campuses to use resources effectively, space being one of these resources, the academic culture of shared governance, with its fragmented roles for decision making, presents additional challenges. These roles are fragmented due to independent faculty and administrative action. They are ambiguous due to the unclear lines of authority of the various bodies that constitute the shared governance system, including faculty senates, faculty unions, administrative-faculty committees, and administrative committees.

Based on the author's study of three institutions driven by the research question—How are decisions made about space management issues in public higher education, and how are they related to changing values and priorities, educational effectiveness, and institutional mission fulfillment?—the purpose of this article is to show how public higher education institutions address space management issues related to the allocation, utilization, and renovation of existing campus space.

WHAT'S THE PROBLEM?

The individual case studies revealed different primary space management challenges on each campus. One campus had a *quality* of space problem that resulted in space that was not functionally adequate for its intended use. Another had a *location* of space problem, where related units were scattered around campus or were not located in the academic core. The third campus had a *quantity* of space problem caused by years of rapid enrollment growth.

Despite these core differences, each institution talked in terms of "not having enough space" even though they may have had vacant space or underutilized areas on campus. The importance of clearly identifying and accurately defining an institution's space management challenges emerged as an important finding. Institutions that fail to recognize their primary challenge may end up pursuing unnecessary new construction projects as a solution to a non-existent problem.

For instance, institutions in this study were reluctant to move entire departments to make better use of existing space leaving the impression that there was a space shortage, when in fact; there was adequate space, but in a different location on campus. This presented a different challenge in terms of engaging in departmental negotiation and organization culture change, which many institutions are disinclined to address. A mindset of ownership and entitlement that develops on campus makes it difficult to alter space assignments and these attitudes inhibit organizational flexibility and opportunities to accommodate uneven growth and expansion.

WHAT ARE COMMON INDICATORS OF SPACE PROBLEMS?

Quality of Space. Quality of space issues can be identified by recognizing that you do have space on campus, but it may not meet your current programmatic needs. For example, your buildings were not designed for their current use, as seen at one institution that purchased a car dealership and adapted the space to suit their needs, and another that purchased a convent and converted the dormitory rooms into office space, each with its own sink. Many older buildings do not conform to current standards, you have open space when you need private offices, you have outdated science laboratories, or you have classrooms that are not updated to address new pedagogy and technology needs.

Before you build new facilities, you need to ask questions: Can we upgrade the existing facilities? Can we relocate departments to maximize utility? Can we use creative designs to adapt unconventional space to our needs? A space planner at one institution noted that the quality of the space affected people's attitudes and behaviors; people that were assigned to new or renovated space had positive feelings and were more interactive and welcoming. The quality of the space made them feel better about themselves, their work, and their university.

Location of Space. Perhaps you have space, but it is not where you want or need it. Departments may not have contiguous space. Space may be located outside the academic or campus core and is not near other campus services and programs. One campus was physically divided by a major roadway, resulting in an east and west campus. One side was built as the original

Most importantly, have you engaged the campus community in these space discussions?...Take time to listen and promote open communication.

campus, and the other side was viewed as less desirable expansion space consisting of pre-existing buildings.

Questions you can ask include: Can you move departments around to locate related offices in contiguous space? Can you develop an interdisciplinary approach to space that takes advantage of a department's scattered locations? Can you improve services to enhance perimeter locations? Can you incentivize departmental relocation to less desirable locations on campus?

One campus successfully offered a department more space than requested to relocate in a less desirable location on campus.

Quantity of Space. You have examined all your space and have determined that all available space is fully utilized and conclude that your institution has outgrown its footprint. One institution recognized that they had a surplus of classrooms during the day, but the classrooms were used to capacity during the evening hours due to the large number of part-time undergraduate and graduate students. To accommodate this imbalance, they established satellite campuses to relieve the shortage of classrooms in the evening and adopted an alternative scheduling model which utilized classrooms on weekends.

Questions you need to consider are: Have you really fully utilized your space? Can you increase the hours and days of facility usage? Is building a new building the best alternative? Can you lease or purchase an existing building in the vicinity? Can you move some services or departments off campus to free up space? Even after examining your campus situation, you may need to engage in a combination of new construction, renovations to existing buildings, purchases of buildings, and leasing private space in the surrounding area.

COMMUNICATING WITH YOUR STAKEHOLDERS

Most importantly, have you engaged the campus community in these space discussions? The stakeholders on campus may have ideas and suggestions that have not been discussed. Can departments openly discuss the space challenges and propose solutions? Can you facilitate collegial discussions with all stakeholders that result in cooperative efforts to resolve these issues? Take time to listen and promote open communication. Pay attention to the process.

WHAT'S THE DECISION-MAKING PROCESS?

Once you have a better understanding of your space-related challenges, do you have an effective and efficient process to make decisions? The findings in this study related to decision making can be translated into four interrelated fundamental components that enhance the effectiveness and efficiency of space management decision making in public higher education institutions.

1. Establish a process for requesting, reviewing, and making space-related decisions. A process will standardize procedure and make it more transparent. The process needs to be clearly identified and communicated to the campus community. The process should include criteria for evaluating requests, prioritization, communication, and implementation. The process requires requestors to fully explain their needs and provide the necessary information and rational for the request and explain how the request aligns with the institution's mission and priorities. One institution identified both a top-down process and a bottom-up process to accommodate requests coming from the administration as well as the academic department.

2. Delegate decision-making authority. Recognize and identify the levels of authority required for different types of space related requests, typically assistant vice presidents or vice provosts were designated with space allocation responsibilities. Do not burden the highest level executives with issues related to incremental space issues and minor renovations. Developing and maintaining trust in the next level of administrators is critical; one vice president remarked: "If I didn't trust them, I wouldn't be giving them the job." Delegating authority resulted in a more open and transparent process. Identify criteria when chief executives must be consulted, such as expenditure limits, major renovations, or legal challenges.

3. Design an effective space committee. Knowledgeable committee members can identify available space based on

the requestor's needs. Determine who is best situated to make space-related decisions. What expertise do you need on the committee? On one campus, the role of the space committee was to listen, review information, and make recommendations on major space issues to the vice presidents, who then made final decisions. They served in an advisory capacity to help resolve conflicts resulting from controversial space issues. Another model was to give the space committee decision-making authority and have the vice presidents serve as an appeals committee. In an effective space committee, the members must be well informed about campus priorities and trusted to act in the best interest of the institution.

*4. **Collect accurate data**.* Both quantitative and qualitative data are necessary to effectively make space-related decisions. Maintain an accurate inventory of space and its use, and conduct annual space inventories and audits. All space modifications need to be reported to the office of space management to be entered in the master database. Numbers alone do not provide enough information; someone has to be familiar with the physical space and conduct regular inspections to evaluate usage and condition. Not all functional usage can be described by square footage. National standards and guidelines for space allocation are important for new construction, but are less relevant when applied to older buildings. One space planner noted that conducting a personal inspection of space not only enhances data collection, it helps to build a network of people knowledgeable about space in their unit. Another institution made all space-related data available online for the campus community.

CONCLUSIONS

The most pressing implication for practice is the evidence of the importance of establishing a process for space management decision making. This process needs to include stakeholders and be clearly identified and communicated to the campus community. Authority and responsibility for decision making should be delegated to administrators that are knowledgeable about space on campus and institutional priorities. Space planners need to collect and maintain accurate data based on both quantitative and qualitative analysis to make valid recommendations to the decision makers. Having designated personnel to maintain and analyze space data is important in that it frees up the time of higher level administrators and utilizes the skills and expertise of another group of professionals.

Although some campuses had detailed criteria for space committees and decision-making processes, the campus community was not always well informed or knowledgeable about either. A lack of good communication made many members of the academic community unaware of how space was really managed on campus.

Additional implications indicate that institutional priorities need to drive decision making, and individuals that bring an institutional perspective should participate at the highest level. Campus-wide planning processes that are intended to identify priorities, such as strategic planning, master planning, and academic program planning, are often decentralized and lack integration, which will negatively impact their overall effectiveness.

When planning is integrated and well communicated, plans for expansion of programs and enrollments can be considered as they relate to space and future space needs. Educational innovation and change require infrastructure flexibility and adaptability that are both necessary to accommodate uneven growth and constant change.

Sandra Blanchette is director of strategic initiatives at University College, University of Massachusetts Boston; she can be reached at *sandra.blanchette@umb.edu*. This article is based on the author's doctoral dissertation and is adapted with permission from her more extensive article published in the October 15 issue of *Planning for Higher Education*, a publication of the Society for College and University Planning (*www.scup.org/phe*). This is her first article for *Facilities Manager*.

UNDERSTANDING FUNCTIONAL ADEQUACY AND FACILITY CONDITION FOR STRATEGIC DECISION MAKING

BY RAY DUFRESNE

At colleges and universities today, the increasing number of students is putting new pressure on facilities—and on facility staff. According to the 2012 APPA Thought Leaders report *Campus Space...An Asset and a Burden*, "Colleges and universities are scrambling to find enough classrooms, labs, and offices, and demand is expected to grow in the next few decades. Some 23 million students will be crowding U.S. colleges and universities by the end of the decade, yet only 6 percent of campus space is classified as classroom." These numbers mean that most schools will soon be falling short in their ability to support students, if they are not already.

Student needs are also increasingly different, and most campus facilities have not kept up with the changing times. Quoting again from the Thought Leaders report: "More than half the buildings on college and university campuses were constructed in the 1960s and 1970s when the Baby Boom generation reached college. The construction of these buildings reflected the then-current thinking on pedagogy, which essentially consisted of a professor at the front of the room lecturing to a passive student body." An example of this, recently described in *The Chronicle of Higher Education*'s *The Digital Campus*, is a professor at Virginia Tech who leads highly interactive classes with up to 3,000 students in the largest space on campus, has guest speakers via Skype who receive questions from Twitter, and runs other classes from his office space with hundreds of students online.

With changing technology and user needs, numerous questions must be asked. Are the classrooms and labs up to date? Do they allow for interactive work? Is space going to waste, and

costing money to operate? Can the space be easily modified or repurposed to accommodate changes?

Facilities are expensive to build, maintain, and renovate, and costs are on the rise. Funds for building, operating, and maintaining classrooms and laboratories, offices, and libraries represent a growing demand on the annual budget for higher education institutions. To effectively plan the capital spending for its facilities, a school needs to know not only the repair and renewal costs to maintain good condition but also the functional adequacy—the ability of a facility or a portion of the facility to match the current or intended use—and the cost of renovations required to bring facilities up to current standards and to make them suitable for changing needs.

A STRATEGIC APPROACH

It is important to take a strategic approach, looking at an entire campus holistically. Any analysis, in order for it to be valid, must be based on accurate, objective data, including an understanding of current facility condition and remediation costs, functional adequacy, and demographics. Without access to detailed information regarding these issues, facilities managers and capital planners find it virtually impossible to decide whether buildings are worth the investment required to make them both useful and usable.

One important step is gathering accurate facility condition and cost data, through facility condition assessments (FCA) or self-assessment, which results in a benchmark to analyze the effect of investing in facility improvements. Developed by industry associations, including APPA, this benchmark is known as the Facility Condition Index (FCI). The FCI is the ratio of deferred maintenance dollars to replacement dollars, and provides a straightforward comparison of an organization's key estate assets. To calculate the FCI for a building, divide the total estimated cost of deferred maintenance projects for the building by its estimated replacement value. The lower the FCI, the lower the need for remedial or renewal funding relative to the facility's value. For example, an FCI of 0.1 signifies a 10 percent deficiency, which is generally considered low, and an FCI of 0.7 means that a building needs extensive repairs or replacement.

The FCI provides the ability to compare similar buildings to each other and to establish target condition ratings. Comparing buildings analytically rapidly highlights the buildings that are in the greatest need for updates, repairs, or replacements.

Next, functional adequacy must be addressed. Facility performance should be evaluated to determine if the building in question is still suited for the purpose originally intended, or if it needs to be changed for new uses. Measuring the functional adequacy of a building or campus requires a functional assessment to capture the current status, compare it to a predefined standard, and then identify the gaps.

Functional assessments may be conducted for an entire facility, or for a portion of the facility, e.g., classrooms, or laboratories or for specific rooms that are critical to the function of the department. Similar to an FCA, functional assessments need to be conducted on a regular basis. There are a number of potential sources for information on the current standards of delivery of a particular activity, i.e., teaching, research, dining, or athletics. Industry associations and companies have collected data over time from a variety of sources. Schools also develop standards that apply to their own facilities.

The gap analysis shows what changes need to be made to a facility to bring it into compliance. A functional score can be defined that gives the facility under review a rating as to how well it meets the overall standards. Ideally, a solution that includes a quantitative ranking system for functional criteria that enables the assignment of scores will help educational institutions objectively prioritize current requirements and focus their capital initiatives where they will be most effective. Modeling tools for functional assessment, coupled with facilities capital planning software, can provide a framework for organizations to evaluate alternatives for capital spending and their impact over time.

With metrics such as the FCI and a functional adequacy score, educational institutions can objectively prioritize facility projects and capital spend. The most successful prioritization is based on

organizational objectives as well as an understanding of the relative importance of assets, the functionality of the buildings, and demographics that may impact use.

For example, most schools have certain buildings on campus that are strategically critical with a high level of permanence. They serve a specific and highly necessary function, and the student population that uses these buildings is growing. These buildings are essentially irreplaceable and a low FCI is important. The strategy for such critical buildings may be to invest to improve—renewing systems proactively, ensuring functional adequacy and addressing deferred maintenance.

On the other hand, many campus buildings may be operationally redundant, subject to frequent mission change, and easy to replace. They may no longer be serving the purpose for which they were built, and may or not be able to be repurposed. Demographic analysis for the population that uses these buildings may show a decline in future use or a change in who is using them. Depending on what the analysis shows, the strategy for these less vital assets may be to reduce operating and maintenance costs, maintaining only critical systems for business continuity, making no long-term investments, and positioning for short-term disposition or alternate use.

The key benefits of a systematic, data-driven approach to functional adequacy, that includes a holistic view taking into account facility condition, is that the results are defensible; that upgrade costs can be quantified to facilitate all-inclusive planning; and that unnecessary spending on functionally deficient buildings can be avoided. Given the numbers of students on campus, and their demands to learn differently using technology, now is the time for colleges and universities to assess both the functional adequacy and condition of their facilities.

By combining best-of-breed methodologies for these assessments with sophisticated modeling and decision support tools, educational institutions can optimally plan for the future, take the subjectivity and guesswork out of the process, and use a rational, repeatable process to determine how to allocate funding where it will have the most impact and best support educational goals. Analysis based on accurate data results in objective prioritization, a clear path to decision making, and, ultimately, intelligent investment choices resulting in cost savings over time.

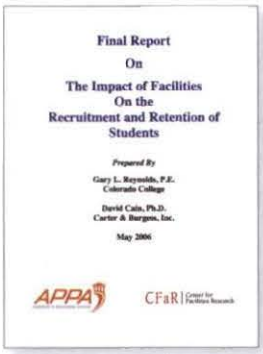
Ray Dufresne is vice president at VFA, Inc., a Boston, MA-based provider of end-to-end solutions for facilities capital planning and management; he can be reached at *rdufresne@vfa.com*. This is his first article for *Facilities Manager*.

Another Look at the Impact of Facilities on the Recruitment and Retention of Students

By Maggie Kinnaman, APPA Fellow

Over the past 42 years considerable research has been done to understand the issues that impact the decision of a student's choice of a higher education institution. This research has focused on understanding the phases of the decision process, the timing of the phases in the decision process and the personal, financial, and environmental factors that influence institutional choice. While many of these studies include some aspect of the institution's physical environment, these physical aspects are usually secondary to the main thrust of the research.

In 2006, through the support of APPA's Center for Facilities Research (CFaR), APPA attempted to determine the level of importance of facilities relative to other institutional characteristics and then to explore various facilities influences. The relationship and linkages between physical assets and outcomes were explored and examined in this study, published as *Impact of Facilities on the Recruitment and Retention of Students: Final Report*.



This report sought to answer questions such as:

- What factors influence a student's choice of higher education institution? When and how do students obtain their information about an institution? What institutional factors influence a student to stay at their original institution of choice? What are the differences between demographic groups in this decision process?
- What can the physical assets (buildings, grounds, landscape, and other tangible resources) do to help recruit students?
- What is the benefit of facilities in the recruitment process?
- What, if any, impact does facilities have on retaining students?
- Are there demographic differences in the impact of facilities on recruitment and retention?

Though it has been six years since the study was conducted and results published, the facts continue to resonate and hold true today.

RESEARCH FINDINGS

The analyses of the study showed a positive association between the built environment and student recruitment and retention, suggesting that institutional characteristics and facilities have a direct correlation with a student's decision to attend a particular school, both initially and after enrollment.

While academic issues were at the top of their list when it came to choosing an institution (that is, the institution had to have a strong program in their field of interest, have excellent teachers, and so on) an attractive campus and quality facilities did play a role in the decision process, but they were not necessarily a deciding factor.

That said, the survey results suggested a significant number of respondents *rejected* an institution because important facilities were missing, inadequate, or poorly maintained. Therefore, it may be safe to say that having a quality built environment is a necessary but not sufficient condition to recruit and retain students.

CONCLUSION

The research indicated that the built environment is fundamentally related to recruitment and retention of students. This relationship suggests that campus planning and operations of the built environment should be an integral part of the recruitment and retention strategy.

Long-range planning for new construction and the repair and replacement of existing facilities and infrastructure should be an integral part of the institution's strategic plans in support of the academic mission. This relationship suggests that collaboration is needed between the units of facilities management, executive leadership, admissions, and housing authorities.

The complete report is available at the APPA bookstore, *www.appa.org/bookstore*; the cost is $22 for APPA member institutions, and $45 for nonmembers.

Maggie Kinnaman is a Past APPA President and co-director of the CFaR Advisory Council; she can be reached at *maggiekinnaman@comcast.net*.

Luminous Egress Path Markings

It's More Than the Eye Can See

By Mark A. Goska, AIA, LEED AP

When the 2009 edition of the International Code Council (ICC) family of codes was created and adopted, a little-known change in the International Building Code (IBC) and the International Fire Code (IFC) came into effect that, when enforced, can have a substantial impact on both construction and O&M budgets. What is this code requirement, you ask? Well, it's the requirement to install luminous egress path markings along the exit pathways in buildings having occupied floors located more than 75 feet above the lowest level of fire department vehicle access.

What are luminous egress path markings, and how long have they been a requirement for life safety? The National Fire Protection Association's (NFPA) Life Safety Code defines photo luminescence as "having the ability to store incident electromagnetic radiation typically from ambient light sources, and release it in the form of visible light." In other words, photoluminescent material absorbs energy provided by visible light and near visible light and then releases that energy at some later time, also in the form of light."[1]

HISTORY

The use of photoluminescent markings began in the 1980s with the FAA requiring the use of electrically powered markings on commercial aircraft. Since that time, the NFPA and other code councils have passed the requirement for photoluminescent egress path markings in response to accidents involving fatalities, including the attacks on and the collapse of the World Trade Center towers on September 11, 2001. In 2007, the ICC adopted the requirement of pathway markings along the exit pathways, including the stairwells, of new high-rise buildings of most occupancy groups: assembly, business, educational, institutional, mercantile, and transient residential (hotels). This requirement was included in the 2009 editions of the IBC and IFC and in 2008 was amended to include existing high-rise buildings for the IBC 2009 edition. Interestingly enough, R2 occupancies, which include dormitories and fraternity/sorority houses, are not included in this requirement.

THE NFPA AND OTHER CODE COUNCILS HAVE PASSED THE REQUIREMENT FOR PHOTOLUMINESCENT EGRESS PATH MARKINGS IN RESPONSE TO ACCIDENTS INVOLVING FATALITIES, INCLUDING THE ATTACKS ON AND THE COLLAPSE OF THE WORLD TRADE CENTER TOWERS ON SEPTEMBER 11, 2001.

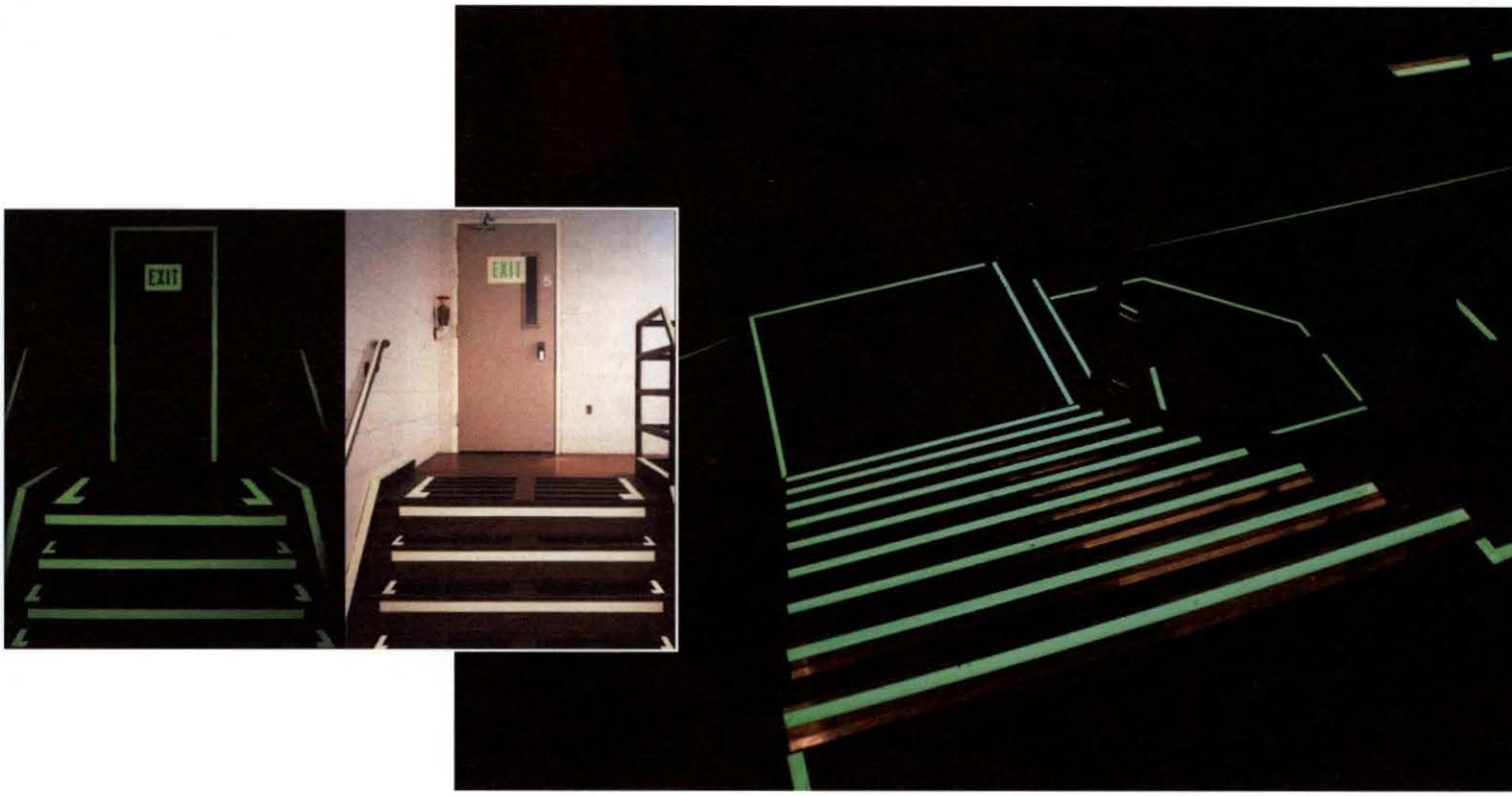
QUESTIONS

As one looks at the code requirement and compares it to the life safety features that are currently in place, the question of why is this needed arises. Per the ICC, the justification for this requirement states, "Improved safety for individuals negotiating stairs during egress of a high-rise building is provided by improving visibility of stair treads and handrails under emergency conditions. The provisions of Section 1024 add an additional level of safety to the egress path by requiring the installation of photoluminescent or self-illuminating marking systems which do not require electrical power and its associated wiring and circuits."[2] Other questions and concerns regarding this code section are:

- is it retroactive
- who enforces this requirement in your jurisdiction
- what will it cost to install and maintain
- what is your responsibility for ensuring compliance, and
- are there options available for compliance?

ENFORCEMENT

This code requirement is located in both the IBC and the IFC. The IBC provides code requirements for new construction and the IFC for existing facilities, so yes, this is a retroactive code. Enforcement of the code varies by jurisdiction, however in our jurisdiction the fire marshal's office, both at the state and local levels, are charged with enforcement of this code requirement.



The cost impact for meeting this code requirement appears to be fluid. Some in our industry are seeing costs to install luminous egress path markings in existing buildings ranging from $1,600 to $1,700 per landing. This cost could vary depending on the material used, the method of installation, and, in the case of retrofits, the existing condition. The requirement to install luminous egress path markings is a life safety issue and, as such, it is the responsibility of the code enforcement entity to ensure that this requirement is met. Non-compliance of this code requirement could result in legal exposure should a catastrophic event occur.

ALTERNATIVE SOLUTIONS

Considering the potential cost impact of installing luminous egress path markings, there are alternative solutions available such as using luminous tape or photoluminescent paint in lieu of mechanically fastened egress path markings. All of these alternative solutions have inherent issues as well.

Using tape as a solution will require that the surfaces be cleaned prior to installation and will need to be kept clean in order to help prevent the tape from losing its adhering capabilities. Like paint, the maintenance costs may be higher due to the need to reapply the material as a result of normal wear and tear from hand and foot traffic.

CONCLUSION

Luminous egress path markings provide an added safety feature to assist occupants of high-rise buildings to exit safely. This feature comes at a cost, but there may be trade-offs in cost when comparing it to the cost of operation and maintenance of emergency lighting and exit signage currently being used. "The main advantage to electrically powered pathway marking is that it can be brighter than photoluminescent technology, … [yet] that brightness is dependent on a battery, wiring, and connections, which may fail to operate. Photoluminescent technology cannot fail to emit light once it has been "charged" by an ambient light source."[3]

However, photoluminescent technology requires a minimum of 1-foot candle of light and in some cases 2-foot candles of light to fully charge the product. This could be problematic if, for instance, the egress lighting located within the exit stairs is connected to a motion detector and doesn't activate unless someone is in the stairway.

Careful assessment of your current life safety condition along with a discussion with your local code enforcement official is important before proceeding with implementation of this code requirement.

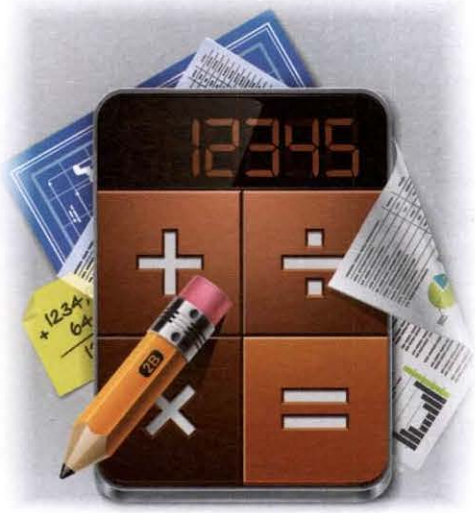
ENDNOTES

1. What is Photoluminescent Marking? James D. Amy, *Building Operating Management*, July 2008
2. Section 1024 Luminous Egress Path Marking, 2009 International Fire Code Commentary, 10-144
3. What is Photoluminescent Marking? James D. Amy, *Building Operating Management*, July 2008

Mark Goska is executive director, quality & compliance, at the University of Alabama-Birmingham. He can be reached at *mgoska@uab.edu*.

Birth of a Construction Management Department

By Matt Adams, P.E.



As much as we try to rely on proven management best practices and fact-based decisions, there are some areas of facilities management that are still not fully documented. For example, APPA has produced guidelines for staffing decision-making support models for housekeeping, grounds maintenance, and the trades. However, the area of capital project management is still in need of similar analysis.

While there is benchmark data to drive staffing full-time equivalents for construction management departments as they grow, the initial baseline of such a service center is not well defined. This is to say, at what point does a facility management department reach the milestone where determinants indicate that a new, dedicated service center for capital project planning and management is required for a growing institution?

THE INCREASE OF CAPITAL PROJECTS

For some of our APPA peers, this scenario will sound familiar. As the institution has grown in size and budget over the years, the facilities department has grown as well. This has included increases in qualified staff and perhaps some direct reports to the director. However, the primary focus of all existing and new position descriptions is that of facility management in the form of "maintenance and support."

The department budget may or may not specifically differentiate between operating and capital expenditures at this point (with the exception of large capital projects.) Nevertheless, an increasing number of small and medium capital items are being executed each year. This increase is having a direct effect on the organization, because this work is being spread among one or more of the leaders within the department, and no longer considered a small diversion from the daily workload.

While not immediately demonstrable with empirical data, it becomes clear that the workload of capital projects is now sizable, and some elements of quality of service are beginning to suffer. So the question becomes one of how to justify an organizational change to the business office. Clearly, most business officers prefer to see hard facts and numbers to justify changes (increases) in resource allocations to the facilities department. It works for the addition of housekeepers, groundskeepers, and trades workers, but this is different, and perhaps more difficult to prove.

DELIVERING QUALITY SERVICE

If we look at capital project management within our institution, we do know there are more than a few key factors that drive performance. First and foremost is quality of service. As the workload grows, the few staff charged with managing the projects become strained to deliver, and still perform the functions required by the maintenance organization. These are sometimes subtle and sometimes obvious "cracks" that can manifest themselves in the form of:

- incomplete documentation during the planning phase of projects,
- diminished communication with the campus customers throughout the delivery process,
- incomplete specifications for contractors, and finally
- cost overruns, delays, and less than optimal results

While this is difficult to admit, the negative trend in quality of service resulting from the continual growth of capital projects is a meaningful indicator for the business office. Furthermore, difficulties with quality of service have a negative effect in other areas as well. Customers often have difficulty distinguishing the maintenance activities from the project delivery activities of the department, thereby painting the entire team with a negative perception of service.

MAKING THE CASE

A case needs to be made for increased resources for capital project management. It is often best to prove your case in more than one manner. So the first approach is to measure the current workload on the existing staff. While most small to medium facility departments do not keep

activity-specific time records for the management staff, this can be created.

Over a period of several months selected to provide a viable sample set of all workload conditions encountered during the year, record time devoted to capital projects by various affected staff. Define in advance the primary activities associated with capital project management, e.g., planning, specification writing, interfacing with campus customers, etc. Be accurate and don't overstate the time requirements.

There are additional factors that will enhance the accuracy of the data. For example, many studies have determined that when a professional stops one task that requires concentrated thought and begins another task, approximately 15 minutes of productive time is lost. So this factor can be thoughtfully applied to the records collected.

Once the data is collected, it is summed and divided by approximately 1,650 hours. This value is the average number available working hours when all the benefits and training are deducted from 2,050 hours at one of our typical institutions. It is also referred to as a full-time equivalent or FTE. Considering that growth is expected, any value of approximately 1,000 hours or 60 percent of a FTE would indicate the pending needs for a dedicated capital projects professional.

Another mathematical approach to determine the need for capital project staff is to utilize the same parameters used by the professional services industry. For years, well-qualified professional service firms have provided construction management or CM services for all industries, including the APPA community. For these services, the fees range from 2 to 4 percent of the project budget. The smaller the project, the larger the percentage charged.

For the peer group addressed in this discussion, the average capital project would be within the range of $250,000 to $500,000. At this level the fee would be 4 percent. Please remember, it is commonly understood within the CM industry that smaller projects require nearly as much professional service work as larger projects.

In conclusion, it may be time to conduct further research on effective staffing and budgeting guidelines for construction management. Improved productivity and greater institutional savings could be the result.

Matt Adams is president of Adams FM², Atlanta, GA. He can be reached at *matt@adamsfm2.com.*

APPA U in Vancouver

By Suzanne Healy

This fall, Vancouver, British Columbia, one of the world's most spectacular cities, played host to APPA's latest offering of APPA U. APPA's professional development offerings of the **Institute for Facilities Management** and the **Leadership Academy**, brought colleagues from across the continent to learn, network, and collaborate.

We are grateful for the dedicated faculty who make these programs such a success. A special note of thanks goes to Institute Deans: **Mary Vosevich**, **Jay Klingel**, **Lynne Finn**, and **Don Guckert**; and our Academy Deans: **Glenn Smith**, **Sue Petrisin**, **Ann Jenkins**, **Shawna Rowley**, **Matt Adams**, **David Judge**, **Doug Christensen** and **Jack Hug**. APPA would also like to extend a special thank you to **Steve Stephens** of UGL Services, who supported Track 4 of the Leadership Academy, as well as hosted an open forum with guest speaker **Chuck Farnsworth** during the week-long program for all attendees.

Throughout APPA U, students had opportunities to interact with experts who brought their knowledge and experiences from vast backgrounds, providing a rich environment for all attendees. As the week drew to a close, we celebrated with graduation ceremonies for the Class of September 2012.

A big kudos to all those institutional leaders who supported the professional development of their staff! The professional development of any individual must be as customizable as the individuals themselves—and APPA is here to help everyone achieve their personal, departmental and institutional goals.

Please visit *www.appa.org/training* for more on all of APPA's program offerings.

NOTE: Our next APPA U January 13–17, 2013 will be held in Tampa, Florida! Information on our next offering will be available via our website later this year. We look forward to seeing you and your staff at the next APPA event!

Suzanne Healy is APPA's director of professional development and can be reached at *suzanne@appa.org*.

Academy Graduates

In alphabetical order; not all graduates are pictured.

Juan Allen, *American University*
Jason Cantas, *Chevron Refinery Canada*
Amy Carnahan, *Michigan State University*
Steve Duncan, *Oklahoma City Community College*
David Hatch, *North Carolina State University*
Glosenda Nayales, *University of Maryland/Baltimore*
Patrick Schlanger, *Regis University*
Al Stoverink, *Arkansas State University*

PHOTOS BY RHONDA HOLE

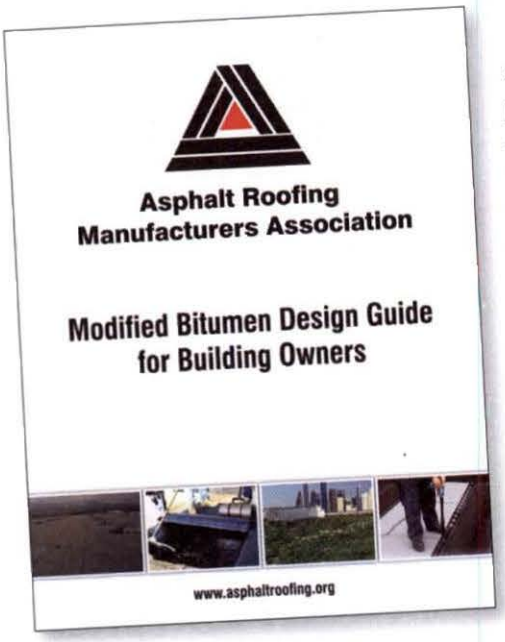
Institute Graduates

Rick Andrews, *Foothill-de Anza Community College District*
Pamela Barrett, *Kalamazoo College*
Meloyde Batten-Mickens, *Gallaudet University*
Tim Carver, *Kennesaw State University*
Vickie Cicchese, *University of Texas/Austin*
Johnny Cline, *North Carolina State University*
Dan Costello, *University of Texas/Austin*
Renee Cota, University of Arizona
James Davis, *Emory University*
Mark Demyanek, *Georgia Institute of Technology*
Andrew Ellenberger, *Pennsylvania State University*
Lou Galante, *University of Iowa*
Sadie Greiner, *University of Iowa*
M. Shawn Harrington, *Fanshawe College*
Candice Jicha, *North Carolina State University*
Deirdra Lawrence, *Tulane University*
Miguel Lopez, *Weber State University*
Ray Maag, *Brigham Young University/Utah*
Vance McCray, *Tulane University*
Lynne Morris, *University of San Diego*
Steve Otto, *University of Iowa*
Jonathan Peeler, *Ross University School of Veterinary Medicine*
Kathy Perez, *University of Arizona*
Kim Piechuta, *Philadelphia University*
Robyn Pierce, *Portland State University*
Nikki Price, *North Carolina State University*
Samantha Reece, *Purdue University/Main Campus*
Craig Regan, *Kwantlen Polytechnic University*
Steve Robinson, *Okanagan College*
Charles Rossignol, *Emory University*
Dexter Satcher, *University of Alabama/Huntsville*
George Smith, *Arizona State University*
George Smith, *North Carolina State University*
Lance Streeter, *Cornell University*
Jeffrey Tate, *Emory University*
Victoria Tate, *Auburn University*
Bill Vaughan, *Reed College*
Michael Wallick, *University of Texas/Austin*
Kyle Williams, *Brigham Young University/Idaho*
Alan Witmer, *Pennsylvania State University*
Paul Wurster, *University of Rochester*
Seyfi Yazicioglu, *University of Texas/Austin*

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

There is likely no building

component that draws more complaints, but is so seldom seen or understood by the campus community, as a roof. Many facility managers need help to understand better the details about roofs in order to ensure they are getting the right product for their facility and that the design/replacement is done correctly. That's because many institutions rely on contract roof maintenance services and consultants to design roof replacements. Think of the following book when you begin to make your roofing plans.



ARMA MODIFIED BITUMEN DESIGN GUIDE FOR BUILDING OWNERS

Asphalt Roofing Manufacturers Association, Washington, DC, 2012, 40 pages, softcover, $25.

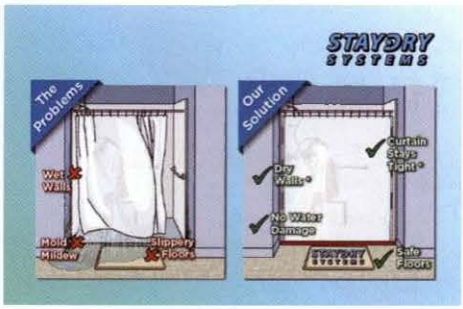
The consortium representing manufacturers of modified bitumen roofing has developed a guide, the *Modified Bitumen Design Guide*, for building owners to improve their understanding of the nuances associated with a particular roofing material. But rather than focus solely on the details of their product, they have written it to address several of the other components that are product independent.

For someone who hasn't been involved in a roof replacement before, the number of factors involved in the selection, design, and details is surprising. There are several structural considerations, then the roof deck itself and what makes up the "sandwich" on top of the building (insulation, vapor barrier, adhesives, the membrane itself, flashing, and accessories). There's not enough to become an expert in flashing details, but it provides a good, big picture of the important decisions for a roof replacement.

While I don't endorse a specific manufacturer or system, this manual provides a thoughtful look at roof replacements in general and modified bitumen roofs in particular. It's well worth the investment of money and time for those who need more information about roof replacements.

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

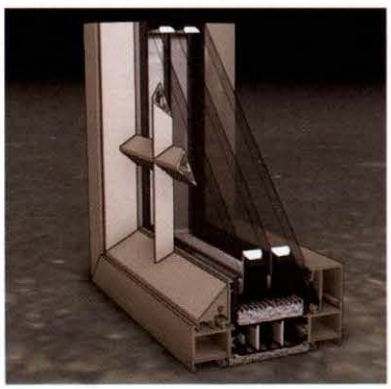
Compiled by Gerry Van Treeck



StayDry Systems, a manufacturer of various shower water control accessories, presents their patented Deluxe Shower Curtain, which creates a reusable watertight seal against any shower wall. The seal is formed by a friction fit of the curtain into a simple wall channel, placed on the wall by its self-adhesive backing. The anti-microbial treated polyester curtains work in a shower stall or a combination tub/shower. Reduces housekeeping and maintenance because floors are kept clean, dry, and safe. To learn more about this product and others from StayDry Systems, visit *www.StayDrySystems.com*.

Norix Group announces a new collection of steel, bedbug resistant furniture. The Norix Protégé Series beds are fabricated completely in steel—the preferred material for dormitories and housing facilities. Bedbug infestations are a persistent problem in group home settings. These facilities are difficult to shut down for chemical eradication procedure, so selecting appropriate furniture is a key element in a bedbug avoidance program. Protégé Series beds are all steel construction—easy to clean, treat, and reuse. The steel mesh foundation does not require a box spring, which is often the primary bedbug habitat. When used with a ComfortShield® inverted seam-mattress, bedbug habitat can be effectively denied. For additional information about the Norix Group visit *www.norix.com*.

Peerless Architectural Windows and Doors introduces the EnergSave G-500 Window Series featuring a U-value of 0.15. The Aluminum Architectural rated series achieves a low U value by utilizing its technology of lower heat flow and reduced air leakage—a Peerless signature of design. The series incorporates aluminum bars placed within the thermal break to serve as an isolation piece to slow heat flow, while low-E foil is used on each side of the thermal break to reflect heat back out. Neoprene foam is placed above and below the thermal break to help absorb and isolate cold air transfer. Low-E Coating is used on the exterior of the glass to additionally reduce heat exchange. The design also allows for two different finishes—one on the exterior and a different one on the interior. To learn more about Peerless Architectural Windows and Doors visit *www.peerlessproducts.com*.



Greenheck's latest addition to the Vektor® laboratory exhaust fan line, the Vektor-HS with SAVVE technology, reduces fan energy consumption and operating costs in variable volume or demand-based laboratory ventilation systems. Sure-Aire™ Variable Volume Exhaust or SAVVE technology incorporates the Sure-Aire noninvasive flow monitoring system that measures pressure drop across a fan's inlet venturi. As air flows through the fan varies, SAVVE technology automatically adjusts the nozzle discharge area to maintain a constant and safe discharge velocity (minimum 3,000 ft/min per ANSI Z9.5) while energy consumption of the exhaust fan is reduced regardless of the laboratory exhaust airflow. Benefits include reduced fan energy, reduced horsepower, and lower sound levels while maintaining proper pressurization of occupied spaces. Building exhaust systems incorporating SAVVE technology may qualify for energy rebate programs and Energy and Atmosphere and Outdoor Environmental Quality LEED™ Credits. For additional information contact Greenheck at *www.greenheck.com*.

Subaru's RGV Industrial Generators provide reliable power and exceptional performance in many applications. The two models—RGV12100 and RGV13100T—are the most powerful in Subaru's extensive Industrial Generator lineup. Featur-

ing top-of-the-line components including powerful Subaru V-Twin engines, the RGV Generators are designed to handle the needs of professional industrial users. For more information regarding Subaru's RGV Industrial Generators contact Robin America, Inc., at *sales@robinamerica.com*, or visit the website at *www.subarupower.com*.

National Chemical Laboratories introduces two new series of products: INCREDILOSO™ Multi-Purpose Cleaner / Deodorizers and MAGIC BREEZE™ Spray Air Fresheners. Both products are now available, and will be offered in two outstanding fragrances, Lavender and "Fresh N' Clean" Mountain-Fresh scents. INCREDILOSO™ Multi-Purpose Cleaner/ Deodorizer offers pH Neutral cleaning that is ideal for all hard surfaces; it leaves behind a long-lasting fragrance. INCREDILOSO™ is biodegradable and is formulated with environmentally preferable surfactants. MAGIC BREEZE™ Spray Air Fresheners use advanced MCA-II™ Malodor Inhibitor technology and nature-inspired fragrances to chemically react with and destroy foul odors caused by smoke, garbage, or other sources. Ideal for use in restrooms, lobbies, public areas, garbage bins—anywhere that long-lasting deodorizing is needed. For more information about National Chemical Laboratories *visit www.nclonline.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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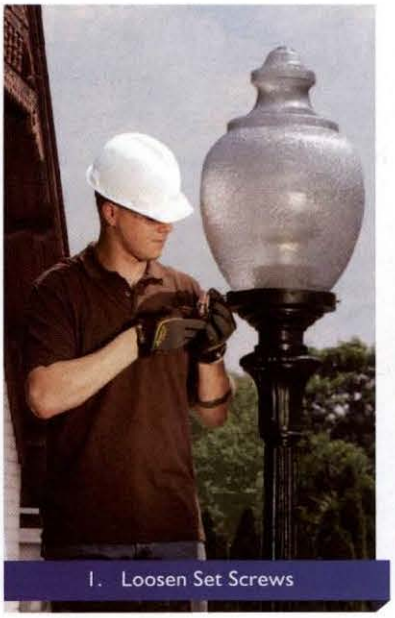
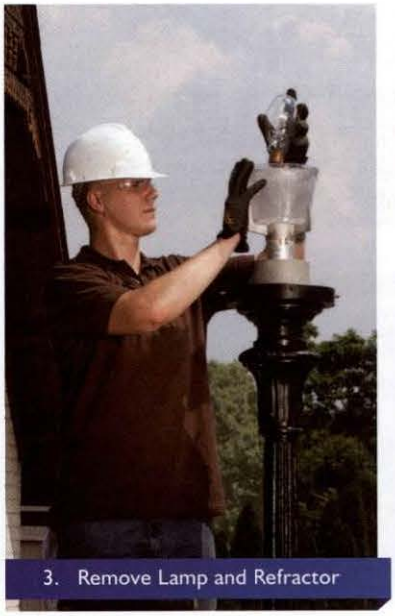
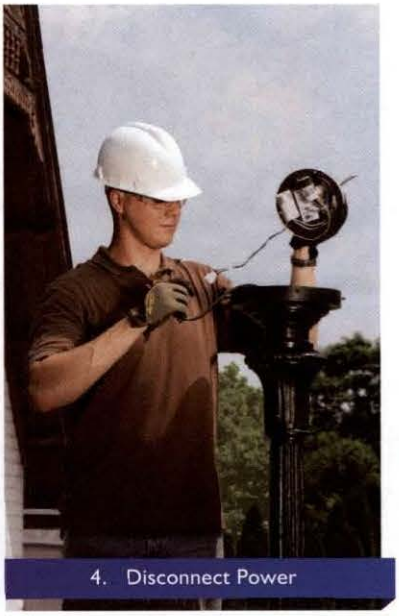


1. Loosen Set Screws

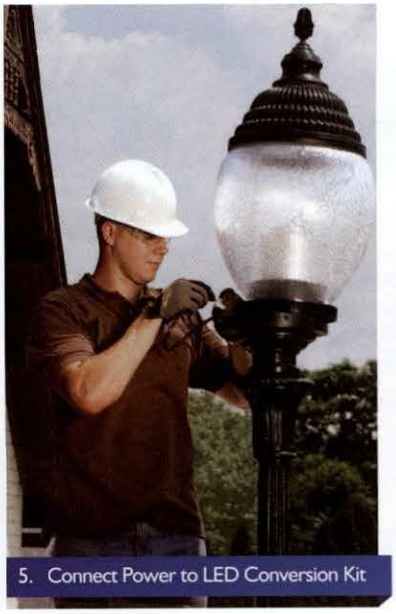
2. Remove Globe



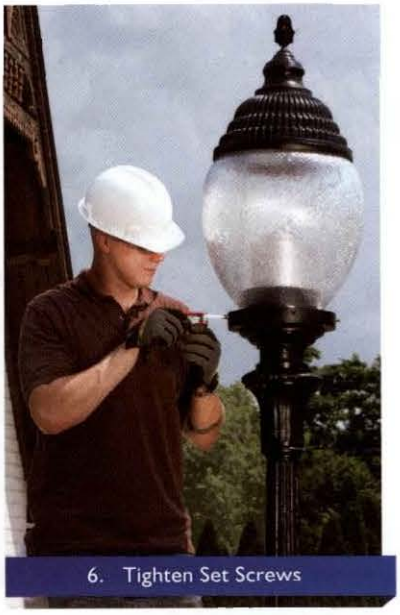
3. Remove Lamp and Refractor



4. Disconnect Power



5. Connect Power to LED Conversion Kit



6. Tighten Set Screws

LED Conversion Kit

Save Big with Quick Switch

With Spring City's LED conversion kit, you can upgrade to LED without compromising your luminaire performance. You save not only money, but also energy and materials!

The simple conversion takes just 10 minutes and requires no special tools. Best of all, it gives you an LED system that:

- Meets foot-candle requirements
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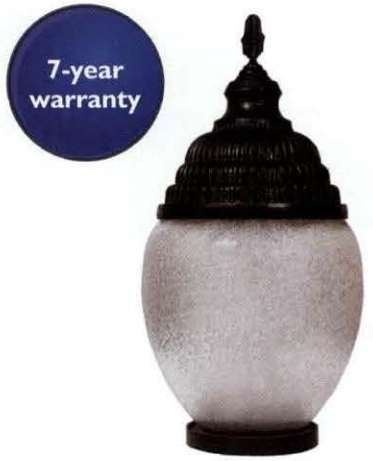
- Is ARRA-compliant and LEED-certified
- And like everything else we produce, they're made in America.

The Washington fixture (pictured here) is just one of many luminaires included in Spring City's wide range of LED conversion kit offerings. We can also upgrade non-Spring City luminaires with our LED conversion kit.

View our video demonstration at www.springcity.com/media or request a demonstration today by calling 610-948-4000.



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Campus Space... An Asset and a Burden

PART 2

SECTION III: Opportunities and implications of improved space management for senior facilities officers

Senior facilities officers and facilities departments have a critical role to play in improving the management of space in higher education. Facilities officers are uniquely skilled at assessing, tracking and managing space, and their contribution will be essential going forward.

Role of the senior facilities officer in institutional management of space

What can the senior facilities officer bring to the table to improve institutional space management?

- **Information.** Facilities departments maintain the most detailed information about campus space. At the least, facilities departments keep track of blueprints; increasingly, they have at their fingerprints building information management systems that contain detailed digitized data about campus space.
- **Metrics.** Facilities departments often monitor multiple metrics about space usage. For example, campuses are increasingly measuring electricity usage by building, by floor, and even by individual classroom, lab, and office. Facilities departments know when classrooms are actually in use because they know when the lights are turned on. Facilities departments are also in the best position to gather and track even more data.
- **Condition assessments.** As previously noted, understanding the quality of space is as important as understanding quantity. Facilities officers have a solid sense of what spaces work and what don't as well as the tools and background to adequately assess what it would take to improve the quality of dysfunctional spaces.
- **Big-picture view.** Facilities officers work across the entire campus and understand what's happening in every school and department. This broad perspective is essential, since so many campus leaders can only speak from their department or school. Facilities departments also bring a perspective uniquely inspired by the campus master plan. Facilities officers understand the master plan and its goals and can help align individual space decisions with that plan.
- **Leadership.** Facilities officers have a unique leadership role in the management of space. They can facilitate discussions across departments and schools while acting as an information resource. They can also act as a neutral arbitrator of space disputes. Senior facilities officers have an opportunity to promote their authority as space experts and help develop processes and policies to better manage campus space.

Data Point:
Powerful data systems facilitate space management

"A good information system offers a way to store CAD drawings, so users have a graphic representation of each building, and allows officials to enter details like its location, including adjacency relationships between buildings and entities like parking lots or athletic fields. It should also track space by category, subcategory, and user-defined codes, and store employee information for everyone who uses that space.

"With the right input, when a department head requests space, you can pull up a graphical report within seconds and see which spaces are vacant, how many square feet that space uses, and the occupancy levels it allows, explains Dave Levenstein, manager of business development at FAMIS Software, which provides products that help organizations maintain and operate facilities assets, manage space, and control capital projects. Officials at Stanford University (Calif.) have even gone wireless with their FAMIS system, the better for officials to walk the campus entering information on the spot."

— Julie Sturgeon, "Lost in space: Campuses find ways to escape the pinch of finite classroom space," *University Business*, 2007.

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Impact on facilities operations of more effective space management

It was clear in discussions at the Thought Leaders symposium that facilities operations would have to change if new thinking about space management took hold. Most changes would be positive, but some challenges would also arise.

Increased space utilization would spread out building operations across the day and week. Instead of a crammed campus between 9:00 a.m. and 2:00 p.m., the institution would be more uniformly busy. If more radical changes were made to scheduling—such as scheduling more classes in the summers, to keep the campus busy 12 months instead of 9—the typical ups and downs in the pace of campus life would rise to a more steady level. This would **even out the use of resources**. It would make campuses more productive and provide for better use of institutional assets.

On the other hand, **scheduling for maintenance and even cleaning would become more complicated**. Today, many classrooms can be cleaned in the afternoon, but if classrooms are full all day and into the evening, janitorial services would have to be moved to the third shift. This schedule is more difficult to manage and more expensive. Further, most renovations and maintenance take place in the summer, when the campus is underutilized. Start filling up buildings in the summer and you've got to find another time to undertake renovations. These aren't insurmountable problems, but they need to be taken into account.

Smarter space management will improve energy use and impact sustainability goals. On the other hand, increased space utilization will **actually increase energy costs**. While heating an empty room wastes energy, filling that room with students, turning on the lights and running the projector uses more. Yes, that energy use is productive, but the higher bill will still have to be paid.

Attention to space as an institutional asset has the potential to **improve the quality of campus space overall**. The facilities department will be called upon to renovate and upgrade those low quality spaces that will need to be made more functional. Along the way, facilities departments can tackle some of their deferred maintenance backlog. Further, by focusing new construction and renovation on highly flexible spaces, the inventory of obsolete spaces will slowly decrease.

Overall, challenging legacy attitudes about space will help the facilities department accomplish its institutional mission. Spreading the philosophy that space is an institutional asset serves to **elevate the importance of facilities and the role of the facilities manager**. In a new environment, the facilities department might be busier, which is always a worry in this era of tight budgets. But if the value of space rises, so too should the value of the facilities department.

Data Point:
The transformation of the university library

Few spaces on college and university campuses have changed as much in the past 20 years as libraries. Both technology and shifting student expectations have revolutionized libraries. Students now start their research with Google, not the reference desk. Most journals are found online, and books are increasingly digitized.

As for actual, physical volumes, libraries can no longer afford to purchase books just in case some researcher might someday want them. Even Harvard has given up the goal of buying every volume anyone could ever want. "The Harvard libraries can no longer harbor delusions of being a completely comprehensive collection but instead must develop their holdings more strategically," noted the Harvard University Library Task Force in 2009.

Libraries have shifted their mission from information storage to social learning space. Square footage is now devoted to learning commons, study lounges, group study rooms and computer labs instead of book stacks. Libraries are turning to book storage and retrieval systems to maintain their collections more efficiently. While books can be stored 10 to a square foot in on-site open shelving, they can be packed 150 to a foot in high-density storage; the cost drops from $4.26 per year per volume on a library shelf to $.86 per year to in high-density storage.

— Education Advisory Board, *Redefining the Academic Library: Managing the Migration to Digital Information Services*, University Leadership Council.

SECTION IV: Top space management issues for higher education

How the critical issues were identified

The premise of the Thought Leaders symposium is that facilities leaders have much to contribute to the major challenges facing higher education. This year participants felt they could offer unique leadership on the matter of space.

Six top issues relating to space in higher education were identified by symposium participants, along with critical questions for institutional dialogue. The questions are the heart of the exercise: They are intended to guide facilities managers and university leaders in the discussions at their own institutions. A major goal of the Thought Leaders Series is to help individual colleges and universities assess where they stand and help them develop strategies for the future.

One critical point: Readers of previous Thought Leaders reports might notice these issues are very different from those in years past. In previous years, symposium participants identified major issues from every aspect of higher education, ranging from sustainability to technology, demographics to finances. This year, the focus of the symposium stayed firmly on the topic of space, and the resulting top issues are all space-related.

1. Align space management to the mission of the institution.

The issue: Space management should be a tool for the institution to fulfill its mission and become a part of strategic planning for the future.

Strategies:

- Assess how well your mission, master plan and space management program are in alignment today.
- Identify key priorities from your mission and master plan that need to be incorporated into space management.
- Build relationships between the groups and individuals in charge of updating and implementing both the master plan and the space management plan.
- Deal with the challenge of integrating space planning and scenario-based strategic planning for the future.

Space is an asset, but it is also a tool. Smart use of space allows the institution to further its mission and promote its vision. For space management to achieve these goals, the entire approach to space must be in alignment with the overall mission of the college or university and an outgrowth of the master plan.

The goal of integrating the academic mission, master plan and space management plan should be to put decisions about space into a wider context. Too often, space decisions are made in isolation. Instead, they should be made with the big picture of the total campus in mind. Space decisions should be seen as advancing the institutional mission step by step, space by space.

Start by examining the current relationship between the academic mission, master plan and space management plan. Was the space management process developed with reference to the master plan? This assumes, of course, that you have a master plan.

Is the master plan referred to when making space management decisions? Do you need to back up and make sure that the master plan itself is in alignment with the academic mission? Have you incorporated space planning with the institution's vision and scenario for the future?

To start to bring space management and the master plan together, consider some of the key priorities of the master plan and ask how they apply to space. For example, if sustainability is a priority of the master plan, sustainability should be a priority of space management. The goals of the institution can also translate to priorities for space. For example, does the institution position itself as a research university or as primarily a teaching college? Choices about classroom versus research space can flow from this decision.

Integrating the master plan and the space management plan means bringing together disparate groups, since the two functions are often not under the same roof. It will be important to understand who is responsible for the creation and maintenance of both the master plan and space management and get them on board. This will be complicated if space allocation is distributed across many schools or departments. It also means focusing on future needs, challenges, and constraints, and their corresponding impact on space.

Finally, the effort of moving toward increased alignment must include communication. Research has shown that decisions about space are often unclear to outsiders. Increased transparency in space management and allocation should be a goal for all institutions. Communicating the connections between the mission and master plan will help individuals across the campus understand the rationale for decisions about space.

Critical questions for institutional dialogue:

- Describe the relationship between the academic mission, the campus master plan and the space management program. How well are the three interrelated?
- What key priorities of your mission and master plan need to be built into space management?
- If space management on your campus does not currently reflect the mission and master plan, what steps need to be undertaken to bring them into alignment?
- How are the institution's scenarios for the future aligned or integrated with appropriate space needs?
- Are space management and master planning under the control of the same department? If not, do those in charge understand the importance of working together?
- How are space management processes and policies communicated to the campus? Is alignment with the master plan emphasized?

Data Point: The challenge of classroom labs

Classroom laboratories account for about seven percent of assignable space on the average campus (excluding housing), more than the space devoted to classrooms, which averages about five percent. Yet labs are among the most difficult spaces to manage. Labs have several features that make them unique:

- **Departmental or decentralized control.** Even more than classrooms, labs are likely to be scheduled by departments.
- **Distributed locations.** Labs are found all over the campus, in a wide variety of departments. While most people think of the sciences when they picture a lab, in fact many disciplines from modern languages to architecture can have their own labs.
- **Specialized equipment.** Labs by their nature contain equipment unique to their discipline. This makes it difficult to increase the productivity of labs by sharing them across departments, since a physics lab is going to need very different equipment than a geology lab.
- **Large station sizes.** Labs typically require more space per student than classrooms.
- **Dedicated support facilities.** Storage and prep areas are often required to support labs.
- **Unique patterns of use.** Labs are used less often than other classroom spaces; many lab courses meet only one day a week.

Despite these challenges, institutions that can assess the usage of their labs can uncover key information, including outdated labs in urgent need of renovation and underutilized labs that can be converted to other uses.

— Ira Fink, "Class Laboratories: Space and Utilization," *Facilities Manager*, November/December 2003.

2. Make space one of the top assets of the institution.

The issue: Space can no longer be an afterthought but must become one of the main priorities of institutional leadership. The entire campus must adopt the attitude that space is a key institutional asset.

Strategies:

- Understand how space is valued now within your institution.
- Reach out to the right people.
- Gather data about the value of space to make your case.

The primary message of this white paper is that space should be considered a key institutional asset. Elevating space as a priority should improve space management and utilization at your campus.

The first step is to assess how space is valued right now. Perhaps you can come up with a spontaneous reaction to this question, but objective measures will be more useful. It should be possible to determine how space ranks in comparison to other key institutional assets and operations. For example, is space one of the factors that is regularly reported to the chancellor or president? Who is in charge of space management and where do they rank in the organizational structure? If a problem comes up with space allocation, who handles it?

Data Point: The value of space

"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."

— Frances Mueller, Project Manager for the Space Utilization Initiative, University of Michigan, quoted in "Allocating Space Strategically," *Higher Ed Impact*, June 13, 2012.

Noting these measures also gives you a starting point for where to target your attentions. Who is not paying attention to space? Who should start making it a priority? Can you reach key decision makers and channel their energy and attention into making space more important?

You'll also need to make your case for space. This document outlines numerous ways in which space management benefits higher education, but the priorities of individual institutions will affect how you talk about space. A state university or community college under increasing pressure to improve productivity and increase transparency can emphasize how space management helps meet these goals. A campus with an active and vocal environmental movement can focus on the sustainability benefits of space management.

Critical questions for institutional dialogue:

- How is space valued right now in the institution? How can you objectively measure its value—by organizational level responsible for space? By amount of attention from senior administrators? In comparison with other assets and operations, such as finances, labor and technology? How will you know if the value of space has increased?
- What factors contribute to your institution's valuation of space?
- Who should be targeted in any campaign to increase awareness about space? Whose opinion matters?
- How do you increase the understanding of space as an asset?
- What will be the top benefits of well-managed space at your institution? How can you use these benefits to promote improved space management?

3. Change the culture of space.

The issue: Colleges and universities need to shift the culture of space within their institution away from territorialism to appreciation of a shared resource.

Strategies:

- Assess the current culture of space.

- Describe the sort of changes you want to see.
- Develop concrete steps to move toward your vision.

"It won't be enough just to reallocate the space," warned Frances Mueller, Project Manager for the Space Utilization Initiative at the University of Michigan in a recent article for the *Higher Ed Impact* newsletter from higher education consulting firm Academic Impressions. "You have to change the culture, especially if you are fostering shared space."

Frequently the culture of space in colleges and universities is highly territorial. Faculty members and department chairs cling to space and resist any efforts to reallocate offices, labs or classrooms. Departments "own" their space and will fight to defend it—despite the fact this attitude promotes inefficiency.

Efforts to make space a shared institutional resource will inevitably fail—or at least get bogged down in endless political battles—unless this culture is changed. The first step in transforming the culture is to take an honest look at where you are. Get lots of input from many different parts of the campus and develop a broad view of attitudes and beliefs. Do younger faculty have different attitudes than older? Tenure-track versus non-tenure-track? Faculty versus staff? Do different schools or departments have different opinions about space? Who are the haves, and who are the have-nots?

Then develop a vision of the space culture you'd like to see at your institution. Draw on a number of resources here. If your institution is part of a state system, what are state plans and goals for space? Are there any existing statements or goals about space that haven't been fully implemented?

You'll need to think about how far your campus can be expected to change. Change takes time, and higher education is notoriously resistant to it. It would be unrealistic to expect a culture to completely transform itself overnight. Institutions with strong traditions of faculty governance will need to get the faculty senate on board with any major change. Unionized campuses may have different issues than non-unionized. The key will be to come up with concrete steps to shift the culture forward.

What will these steps encompass? Communication should be an element. Those promoting a new attitude about space will need to make clear their goals and the rationale behind those goals. Offer incentives for desired behavior. Show stakeholders how their lives will be better if they buy in to new attitudes about space. If the knee-jerk reaction to being asked to share space is hostile, demonstrate that sharing entitles the department to rewards such as updated spaces with the newest technology.

Finally, you'll need some kind of metrics to measure your progress. It's not easy to measure a change in culture, but creative thinking can help here. For example, if you're setting up a new alternative system where classrooms are turned over to centralized scheduling, it will be possible to measure each year the number of departments and/or classrooms now in that central pool.

Data Point: Managing office space

"Offices are one of the largest uses of institutional space. The policy for allocating offices depends on institutional goals. For example, institutions supporting the socialization and tenure efforts of new faculty should locate them near departmental faculty and offices. If collaborative, multidisciplinary programs are desired, then faculty should be dispersed throughout the campus."

— Watson Harris, "Budgeting Academic Space," *Planning for Higher Education*, October 1, 2011.

Critical questions for institutional dialogue:

- How would you describe the current culture of space in your institution?
- How does the current space management process inhibit or enhance the campus culture?
- What sort of new culture do you want to see?
- What steps are necessary to achieve the desired culture?
- What metrics can you use to measure progress?

4. Develop effective policies, processes, and organizational structures to manage space.

The issue: Institutions need a solid framework of policies and the people to manage space.

Strategies:

- Assess current processes, policies and organizational structures.
- Prioritize what should change in your campus space management system.
- Emphasize key best practices.

Getting into the nitty-gritty of space management means taking a close look at the people and processes actually dealing with space on a day-to-day basis. On a campus with a centralized space management office, this could be an easy exercise. At an institution where space is handled department by department, it could be complex, time-consuming and confusing. Nevertheless, it should be possible to describe the current space system, including all of the policies in place as well as the organizational structure responsible for implementing those policies.

Now you can begin to evaluate the effectiveness of this process. You may have a gut instinct that things aren't working well; can you prove your case with examples? Can you gather data about how well the system is working? Can you get a sense of the transparency of space allocation processes? You may need to be creative in gathering your data. Maybe a short online survey would be useful, or interviews with key stakeholders. What's important is that you get a sense of what's working and what isn't. If some aspect of space management on campus is effective, then by all means keep it in place and see if you can build on that success. If another aspect is universally disliked, you've found a great starting point for improvement.

Revising the space management process is going to take the commitment of high-level administrators. Do you know whose backing you'll need? Can you find champions for your work? Any project of this level of complexity is going to need long-term support, and you need to be certain you'll have help when you need it.

Finally, take time to research best practices in space management and consider the policies, processes and organizational structures that will succeed on your campus. A large, urban community college will of necessity have a very different process than a tight-knit private university. Seek out experts in space management and case studies of successful institutions to find models for new policies.

Critical questions for institutional dialogue:

- Who are the key players and stakeholders? What roles and responsibilities do they have? What motivates them?
- What space policies are currently in place? How effective are these policies? Are they closely followed or routinely ignored?
- What processes are in place to request, allocate, reassign and manage space?
- Are decisions about space transparent?
- Should space policies and processes be updated? Who has the authority to make this decision? Who will lead the effort? Is there a dedicated team of space champions who will see it through?
- What best practices should be built into your space management process?

5. Implement a space inventory system to understand resources and identify needs.

The issue: Institutions need robust, detailed inventories of their space resources.

Strategies:

- Outline your priorities for a space inventory system.
- Assess the pros and cons of your current system.
- Move toward a robust, flexible, accessible inventory.

Repeatedly in discussions of space management in higher education, the complaint rises that decision-makers don't have enough data. While many institutions keep basic inventories of their space using NCES codes, these inventories lack the power and flexibility to be truly useful to their institutions. As discussed in this report, they often fail to account for the quality of

campus spaces, struggle to classify mixed-use spaces, and produce data that is difficult to work with.

The first step in improving your institution's space inventory system is to understand what you want out of your system. What is its purpose? Is the primary goal to report to state coordinating boards? Improve space utilization? Facilitate planning?

Then you need to examine what is available right now. What sort of system is in place, and how well is it working? It may be possible to expand or adapt your current system, or you may need to start afresh. Key questions about the current system will relate to accessibility and integration. An inventory system that is inaccessible to key stakeholders and lacks the capacity to interact with other enterprise systems will limit your institution.

Finally, keep in mind the advice of participants at the Thought Leaders seminar that inventory systems should be forward-looking. In other words, they should support strategic planning, perhaps through analytical tools that allow forecasting. Can you explore different scenarios of space usage using the data in your inventory system? What would it take to add this capacity?

Critical questions for institutional dialogue:

- What is the purpose and desired outcome of your space inventory system?
- What sort of space inventory system exists on your campus right now? Where does it succeed? Where does it fail? Can the current system be adapted to meet your needs, or do you need a new approach?
- How accessible is the space inventory system?
- Does the inventory system integrate with other campus systems such as enterprise resource planning, computerized maintenance management systems, computer-aided facilities management, geographic information systems, etc.? How well?
- Does your inventory system support strategic planning? If not, what steps can you take to move in this direction?

6. Address space utilization by assembling credible data and adopting best practices.

The issue: Institutions can make significant improvements in the use of their space through reliable information management and effective space policies.

Data Point: Key elements of space information

A study by the University of California at Berkeley examined the collection, maintenance and use of space data on campus, paying particular attention to barriers that complicate the accuracy and accessibility of space-related data. The research team identified the following factors as hindering space management on campus:

- **Consistency and reliability.** Lack of consistent and reliable space data interferes with the productivity of campus staff and hinders leadership from making strategic management decisions.
- **Sources and access.** Data should be maintained in an easily accessible and customizable repository to avoid redundancy and duplication of efforts.
- **Ownership and authority.** In the absence of clear and central governance over space data, both departments and individuals have taken ownership of space data related to their units. Since data is not maintained centrally, campus leaders must rely on the de facto owners of this data to make decisions.
- **Transparency and security.** Campus leaders support a more transparent system for space data management, but concerns remain that transparency may have a negative impact on allocation and the security of sensitive data.

Tackling these barriers will help the institution move forward in creating an effective space information system.

— CalSTARS (Space Terminology and Recommended Standards) Team, "Space: An Institutional Data Management Challenge, September 2010.

Strategies:

- Integrate inventory and scheduling systems to automate utilization tracking.
- Examine best practices for improve utilization.

Improved space utilization is the goal of many institutions eager to maximize productivity, limit new construction and tackle sustainability concerns. Many colleges and universities have found that they have more space than they realize, once they have the right metrics and right policies in place.

Credible data is the key to tracking utilization. The most effective utilization systems combine data from space inventories and scheduling systems. Of course, this requires both inventory and schedule data to be readily accessible. If scheduling is handled department by department, this may not be the case. Institutions can sometimes make incremental steps toward centralized scheduling and therefore incremental steps toward better utilization of data. Without integrated systems, space planners are reduced to walking the halls, an inefficient approach although one that is sometimes revealing.

Institutions can also implement best practices to improve utilization. Several policies and practices have proven to significantly increase utilization numbers:

- **Centralized scheduling.** As well as allow for better data collection, centralized scheduling also improves space utilization. Research by Ira Fink and Associates, university planning consultants, reveals that utilization is consistently higher in classrooms assigned through a centralized system rather than department by department.
- **Dedicated staff.** Space has often been an afterthought tacked on to the department secretary's duties. Along with centralized scheduling, institutions have turned to dedicated space managers with the skills to assess and manage space as well as the authority to make key decisions.
- **Standardized meeting times.** Schedules are easier to create when class start times and lengths are standardized across the campus. Inconsistent start times complicate scheduling and leave spaces empty at peak times.
- **Incentivized off-peak classes.** Administrators worry that classes offered during off-peak times—late afternoons, for example, or Fridays—won't fill up, but institutions have found that simple incentives can increase off-peak utilization. For example, mandatory or core classes might be concentrated in off-peak times; alternatively, tuition might be discounted for afternoon or evening classes.

Critical questions for institutional dialogue:

- What sort of utilization data is available right now? Is this data credible?
- Are your scheduling and inventory systems integrated? What steps would be necessary to reach this point?

Data Point: Summer space savings

Space is typically at a premium at EIU [Eastern Illinois University], yet utilization during the summer term is relatively light. Kathy Chancellor, Space Administrator at EIU, began to study her room inventory looking for buildings that could be shut down during Fridays and Saturdays in the summer.

While the three primary instructional buildings had non-instructional space that needed to be available all week, Chancellor's team identified several buildings as shutdown candidates and ran scenarios . . . to determine if any of those buildings could really be closed.

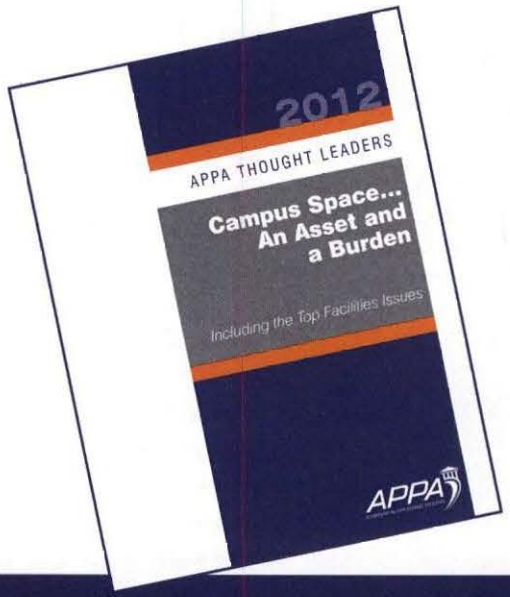
To their surprise, the room optimization tool was able to place the summer term classes in appropriate rooms without using rooms from any buildings on the shutdown list. . . . [Then] the surprise got better. Each year, the scheduling office has followed this practice to deliver big savings. "After looking at a variety of scheduling scenarios, we settled on a schedule that we estimate saved the University $85,000 in energy costs during the first summer alone," Chancellor reports.

— Eastern Illinois University Case Study, Ad Astra Information Systems.

- Has your campus considered various best practices for improving utilization? Which practices would be a good fit for your institutional culture? How can you move toward implementing these practices or policies?
- Do you have defined utilization goals? How will you know you've made progress?

As Frances Mueller 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."

Space must be considered a key institutional asset, managed accordingly. No other issue has such potential to transform the institution than that of the policies and practices related to effective space management and utilization.



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