PUBLISHED BY APPA

JAN/FEB 2017

FACILITIES manager

Space Management and Utilization

+

Critical Questions

Ira Fink's Classroom Use Update

Effective Space Committees

2016 APPA Regional Conferences

Nonprofit Org.
U.S. Postage
PAID
Permit No. 425
Southern, MD

OKOGUARD©

Celebrating 50 Years of Quality & Reliability!

50th Anniversary
1967 - 2017

Okonite, with it's unique Okoguard insulation was the first manufacturer to produce EPR Technology. With it's 50 year unmatched record, Okoguard Cables deliver the most dominate reliability in the industry, ensuring Utility and Corporate Industry Managers unmatched cable characteristics, quality and durability for their power systems.

Okoguard's unrivaled design, service history and performance is why a preponderance of colleges and universities around the country trust Okoguard to provide the trouble-free power and service life that is essential to uncompromising electrical systems on campuses.

Every foot of Okoguard cable bears the imprint of its 139 year old company and Owner/Employees. These employees are proud to manufacture its unwavering quality and reliability and every cable will always be **Made In The USA.**

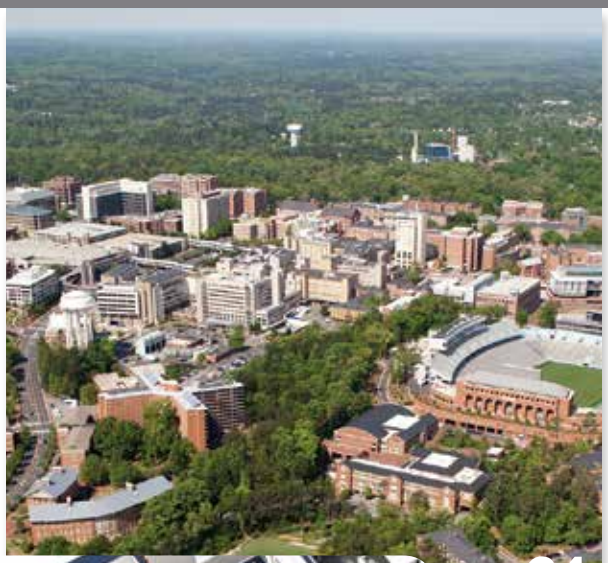
MADE IN USA

THE OKONITE COMPANY

Okonite Cables...A higher Standard!

102 Hilltop Road, Ramsey, NJ 07446 201.825.0300 Fax: 201.825.9026 www.okonite.com

features



SPACE MANAGEMENT AND UTILIZATION

24 Critical Questions for Space Management: From APPA's Thought Leaders Series

Space in any campus environment—college, university, school, museum, corporate—has both a cost and a value. Legacy office and lab space, hoarded and sometimes even hidden, is becoming a practice of the past. These questions help you move more determinedly toward providing clear, fair, and effective space management and utilization services to the campus community.

28 Classroom Use and Utilization

By Ira Fink, Ph.D, FAIA

Improving classroom and class laboratory use and utilization has been and remains an important issue for many campuses. The author updates his landmark work on classroom and class laboratory use through metrics, measurements, and management.

36 How to Structure an Effective Space Committee

By Ann Forman

Space committees can be an important decision-making body on university campuses, helping to generate consensus among senior leaders and shape space management policies. Institutions can keep space committees on track by creating a tiered review process to vet requests and send the most important ones to a senior space committee for review. This article reviews three successful space committee models.

16 2016 Regional Reports

Our annual round-up of APPA's six regional conferences of 2016.

columns

january/february 2017 • volume 33 number 1

From the Editor 4
APPA's Space Management Resources
By Steve Glazner

Facilities Digest 6
By Anita Dosik

Executive Summary 10
The Age of Acceleration
By E. Lander Medlin

From the APPA Board 12
Leadership in a Volunteer Organization
By James L. "Jay" Williams Jr., P.E., CEFP

Membership Matters 15
Change, for the Better
By Kristin Witters

Code Talkers 40
APPA 1000—Total Cost of Ownership (TCO) Work Group Report
By Dana "Deke" Smith, FAIA

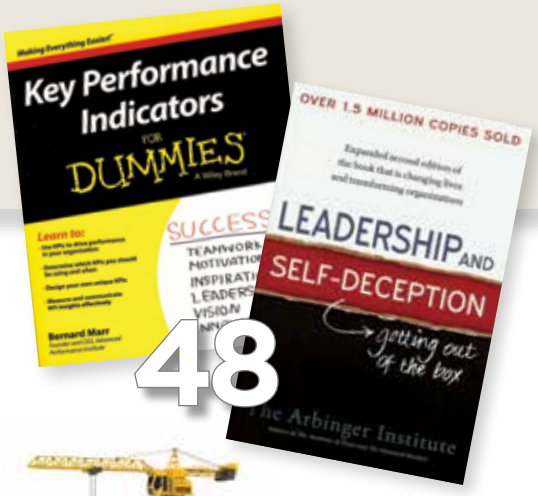
Facility Asset Management 43
The Surprising Emergence of 10-Year Buildings for Long-Term Campus Planning
By Rusty Williams

Knowledge Builders 46
CIL: Customized Interactive Learning—APPA's Latest and Greatest Educational Opportunity
By Ruthann Manlet

The Bookshelf 48
By Theodore J. Weidner, Ph.D., P.E., CEFP, AIA

New Products 51
Compiled by Gerry Van Treeck

Index of Advertisers 52



10%
FSC
www.fsc.org
MIX
Paper from responsible sources
FSC® C117478

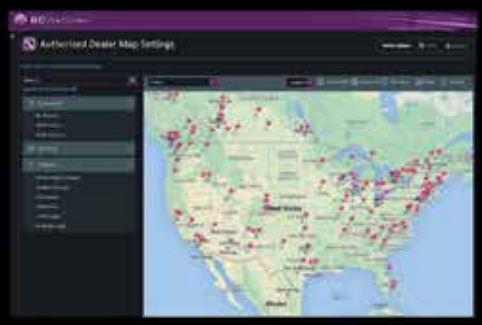
Please share your magazine with others and recycle when discarding.

Enterprise solutions made easy

RCWebView®
BACnet® Operator Workstation Software

Audit Trail

System Group



Navigation Group

Enterprise Schedule

RC-WebView® from Reliable Controls is a powerful enterprise solution that exceeds the BACnet Operator Workstation profile (B-OWS), allowing operators to command any BACnet Internet-connected building configured with System Groups from anywhere in the world.

. . . people and technology you can rely on.™

Member of BACnet International

ISO 9001 14001 QUALITY ENVIRONMENTAL ASSURANCE

www.reliablecontrols.com/RCWV

Reliable® controls

APPA's Space Management Resources

In this issue we focus on campus space management and utilization, and we barely scratch the surface. Space guru Ira Fink returns to these pages to update his landmark work on classroom space and classroom laboratory space, which he introduced to APPA members 15 years ago in *Facilities Manager*. Other Fink articles published by APPA included "Space Management is *Not* Space Counting" and the two-part "Throwing Space Standards Out the Window: Using Benchmarking to Predict Space Needs."

Following is a smattering of resources on space management and related topics through a variety of programs—publications, professional development programs, the Body of Knowledge, and the annual Facilities Performance Indicators report, among others.

FACILITIES MANAGER ARTICLES

- Lander Medlin, *The Game Changers,* November/December 2016
- Laura Vassilowitch, *Find the Hidden Space on Your High-Density Campus,* September/October 2016
- Mark Crawford, *Staying Relevant for the Next Generation of Students,* January/February 2014
- Lander Medlin, *Why Space? Why Now?*, May/June 2013
- Sandra Blanchette, *Space and Power in the Ivory Tower: Effective Space Management and Decision Making,* November/December 2012
- Katie Karp, *Limit the Impact: Build Only What You Need*, November/December 2012
- Victoria Drummond, *Making Room for Planners in FM*, July/August 2012

INSTITUTE FOR FACILITIES MANAGEMENT

- Space Planning and Administration core course (both basic and advanced)
- Programming and Planning Facilities Support Space elective course

THOUGHT LEADERS REPORTS

- *Leveraging Facilities for Institutional Success* (2014)
- *The Rising Costs of Higher Education* (2013)
- *Campus Space…An Asset and a Burden* (2012)

APPAINFO DISCUSSION LISTSERV

- Topics and queries provided by more than 1,040 educational facilities professionals

OPERATIONAL GUIDELINES FOR EDUCATIONAL FACILITIES

- Custodial
- Maintenance

BOK (BODY OF KNOWLEDGE) CHAPTERS

- Building Information Modeling
- Organization
- Recapitalization Management
- Space Planning and Administration

FPI (FACILITIES PERFORMANCE INDICATORS) REPORT

- The FPI includes numerous summary reports related to campus space and various facilities management design and support functions. In addition, FPI users can create their own benchmarking reports with peer institutions based on a number of measures and queries.

If you are interested in working with fellow members on a book or series of articles on campus space management and utilization—including strategies, case studies, design standards, costing, and more—please contact Steve Glazner at *steve@appa.org.*

COMING IN MAR/APR 2017

- Campus sustainability case studies
- GRITS on campus
- APPA's Sustainability Awards

FACILITIES manager

President
Charles Scott, Illinois State University

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
703-542-3837
Fax: 703-542-3782

Advertising and New Products
Gerry Van Treeck, 847-347-7851
gvtgvt@earthlink.net

www.appa.org/facilitiesmanager

Facilities Manager (ISSN 0882-7249) is published six times a year (January, March, May, July, September, and November). Send editorial submissions to *steve@appa.org*. A portion of APPA's annual membership dues ($53) pays for the subscription to *Facilities Manager*. Additional annual subscriptions cost $66 for APPA members, $120 for nonmembers. Contact the editorial office for article reprints.

Copyright © 2017 by APPA. Contents may not be reprinted or reproduced in any form without written permission. The opinions expressed are those of the authors and do not necessarily reflect the views of APPA. Editorial mention of companies or products is for informational purposes only and should not be construed as an endorsement, actual or implied, by APPA.

POSTMASTER: Send address changes to **Facilities Manager**, 1643 Prince Street, Alexandria, VA 22314-2818.

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. Founded in 1914, 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 more than 13,000 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*.

EXCEED EXPECTATIONS WITH OUR
RECYCLING & WASTE CONTAINERS
BUSCH
SYSTEMS

facilities digest

industry news & events

Keep Your Contact Information with APPA Fresh

Please help APPA ensure that you continue to receive the most relevant industry information in an efficient manner. It will take no more than a minute to check your membership profile on myAPPA (*www.appa.org/login.cfm*) to confirm or update your contact information. Should you need assistance, please contact *membership@appa.org* or 703-684-1446.

Climb Higher with APPA's Credentialing Course

The Certified Educational Facilities Professional (CEFP) credential and the Educational Facilities Professional (EFP) certificate offer professional development skills to participants at all levels of facilities management at any point in their career.

The new online format encourages networking among peers through an interactive messaging portal called the Forum and live webinars hosted by two CEFP-certified facilitators. Participants also have access to APPA's Body of Knowledge (BOK) and study guide, as well as interactive learning modules and flashcards. Having the option to study alone or with your peers gives you complete control of how, when, and where you study—and even who you study with!

The APPA CEFP and EFP curriculum will give you access to the latest theory and understanding in facilities management, as well as provide you with the professional competency needed to succeed in this challenging and growing field.

Take control of your future. Climb Higher!

For more information please contact Kelly Ostergrant, APPA's credentialing coordinator, at *kelly@appa.org*.

APPA
PCAPPA + BayAPPA
ANNUAL CONFERENCE & EXHIBITION
HILTON SAN FRANCISCO
JULY 21 - 23 | 2017

Save the Date

APPA/PCAPPA/ BayAPPA 2017 ANNUAL MEETING & EXPOSITION

2017 Annual Meeting and Exposition

Hilton San Francisco

July 21-23, 2017

Mark your calendar to attend our next conference and exposition. You won't want to miss this exciting gathering of fellow facilities professionals and exceptional speakers!

APPA Lands' End Store Open for Business

Show the world you are part of the educational facilities world's top professional organization. At the APPA Land's End store, you can purchase high-quality apparel and other gear of your choice and have it personalized with the APPA logo. All personalized products are backed 100 percent by the Land's End's product guarantee. Polo shirts and caps are now available. They are ready to have the APPA logo added—and product offerings are growing. Visit *http://ces.landsend.com/APPASTORE* today to fulfill your APPA gear needs—and those of your staff—at the APPA Land's End store.

APPA's Facilities Management Evaluation Program (FMEP)

The quality of an educational organization's facilities has a major impact on attracting and keeping students. But how do the many people who depend on your facilities define quality? How do your facilities meet their expectations? And how do they measure up against other campuses?

APPA's Facilities Management Evaluation Program (FMEP) helps you turn these questions into a powerful catalyst for improving how you manage your facilities. Modeled after the Baldrige National Quality Program Criteria for Performance Excellence, the FMEP criteria provide a framework for continuous improvement. This customized evaluation gives you the feedback and actions you need to transform your educational facilities program into one worthy of international recognition for quality.

The FMEP is not a cookie-cutter process. Each FMEP is customized and tailored to the specific institution for which it is conducted. The evaluation team is hand-picked so that each institution is evaluated by a select group of peers from campuses sharing similar educational, financial, and physical characteristics.

If you are interested in:

- Achieving continuous quality improvement
- Improving your understanding of facilities issues, and
- Exceeding customer expectations
- Changing your organization's responsiveness to the demands it faces...

Consider the APPA FMEP! For more information, visit *www.appa.org/fmep/* or contact Holly Judd at *holly@appa.org*.

CALENDAR OF EVENTS

APPA Events

Jan 30-Feb 3, 2017
APPA's Supervisor's Toolkit, East Carolina University, *Greenville, SC*

Mar 1, 2017
APPA Drive-In Workshop, University of Texas, *Austin, TX (sponsored by ONICON)*

Mar 6-8, 2017
APPA's Supervisor's Toolkit, Saginaw Valley State University, *Saginaw Valley, MI*

Mar 13, 2017
APPA Drive-In Workshop, George Mason University, *Fairfax, VA (sponsored by Seal Master)—VAPPA preconference*

Mar 13-17, 2017
APPA's Supervisor's Toolkit, Spelman College, *Atlanta, GA*

Mar 26-28, 2017
Smart and Sustainable Campuses Conference, University of Maryland, *College Park, MD*

May 22-26, 2017
APPA's Supervisor's Toolkit, Clarke County School District, *Athens, GA*

July 20, 2017
EP and SFO Summits, *San Francisco, CA*

July 21-23, 2017
APPA/PCAPPA/BayAPPA 2017 Annual Meeting & Exposition, *San Francisco, CA*

Regional/Chapter Events

Jul 21-23, 2017
PCAPPA 2017 Conference (joint with BayAPPA), *San Francisco, CA*

Sep 17-21, 2017
MAPPA 2017 Conference (joint with CAPPA), *St. Louis, MO*

Sep 17-21, 2017
CAPPA 2017 Conference (joint with MAPPA), *St. Louis, MO*

Sep 18-20, 2017
RMA 2017 Conference, *Jackson, WY*

Oct 25-28, 2017
SRAPPA 2017 Conference *Charlotte, NC*

Oct 29-Nov 1, 2017
ERAPPA 2017 Conference, *Washington, DC*

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

Compete in RecycleMania This Spring – Competition Starts February 5!

RecycleMania is a friendly competition and benchmarking tool for college and university recycling programs to promote waste reduction activities on their campus. Over an 8-week period each spring, colleges across the United States and Canada report the amount of recycling and trash collected each week and are ranked in various categories. With each week's updated ranking, participating schools track their performance against other colleges and use the results to rally their campus to reduce and recycle more.

WHY PARTICIPATE IN RECYCLEMANIA?

- **Knowledge is power.** Use the competition to benchmark your school's recycling efforts and track improvements over time. Coordinators can this information to communicate your recycling progress to students!
- **School spirit!** Whether you're striving to reach a recycling goal, competing against a rival school, or aiming for the national title, RecycleMania brings out competitiveness in all of us.
- **Get your administration's attention.** Participation can benefit your school's recycling programs by bringing attention to, and making the case for, additional resources to expand your campus waste reduction efforts.

HOW YOU CAN PARTICIPATE:

Competing schools can participate in different categories based on their interests and level of involvement desired. Colleges can plan outreach events and compete based on per capita recycling or diversion (recycling rate) for the full 8-week tournament (see details at *http://recyclemaniacs.org/participate/rules*). If the reporting requirements for the traditional 8-week categories look daunting, there are ways to compete without having to track recycling for your entire campus! Competitors can focus on a single Game Day Basketball event, or do one of the special competitions like Race to Zero Waste or E-Cyclemania, which are great ways to get involved for the first time.

The competition starts on February 5, so register at *https://recyclesearch.com/profile/recyclemania.*

Supervisor's Toolkit
Nuts and Bolts of Facilities Supervision

Supervisor's Toolkit – Venues in 2017

Supervisor's Toolkit has been specifically designed to meet the needs of the facilities management professional. It is a structured, open-ended, and pragmatic approach to developing supervisors, and designed to help them realize both personal and professional growth. The program is designed for a full week of training.

For more information contact Corey Newman at *corey@appa.org*, or visit *http://www.appa.org/training/toolkit/.*

SRAPPA Tennessee State University
January 9-13, 2017

SRAPPA East Carolina University
January 30 - February 3, 2017

MAPPA/MiAPPA 2017 - Saginaw Valley State University *March 6-8, 2017*

SRAPPA Spelman College *March 13-17, 2017*

SRAPPA Clarke County School District
May 22-26, 2017

Correction on Home and Campus Care article by Steven R. Hultin and John P. Morris

Table 5 on page 27 of the November/December issue should have read 6,000,000 in the building area (sq. ft.) section. The corrected chart below has been posted on the online version of the article:

Table 5: Simplified Total Cost of Ownership (TCO) for a Typical Campus Setting

Typical Campus Setting			
		Unit Cost ($/Sq. Ft.)	% CRV
Building Area (Sq. Ft.)	6,000,000		
Building CRV	$2,700,000,000	$450	
Building Annual Maintenance	$19,650,000	**$3.28**	0.7%
Annual Building Renewal Costs	$43,866,000	**$7.31**	**1.6%**
Total Maintenance and Renewal	**$63,516,000**		

STAFF CONTACT INFORMATION

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

Executive Vice President
E. Lander Medlin
Phone: 703-542-3829
Email: *lander@appa.org*

Associate Vice President
John F. Bernhards
Phone: 703-542-3848
Email: *john@appa.org*

Information Technology and Systems Manager
Karen Aguilar
Phone: 703-542-3847
Email: *karen@appa.org*

Membership Coordinator
Direna Cousins
Phone: 703-542-3821
Email: *direna@appa.org*

Associate Director for Communications
Anita Dosik
Phone: 703-542-3837
Email: *anita@appa.org*

Accounting Service Manager
Jeannine Fischer
Phone: 703-542-3822
Email: *jeannine@appa.org*

Director of Knowledge Management
Steve Glazner
Phone: 703-542-3836
Email: *steve@appa.org*

Director of Professional Development
Suzanne M. Healy
Phone: 703-542-3833
Email: *suzanne@appa.org*

Director of Credentialing and Benchmarking
Christina Hills
Phone: 703-542-3844
Email: *christina@appa.org*

Human Resources Director & FMEP Administrator
R. Holly Judd
Phone: 703-542-3834
Email: *holly@appa.org*

Associate Director of Professional Development
Corey Newman
Phone: 703-542-3828
Email: *corey@appa.org*

Credentialing Coordinator
Kelly Ostergrant
Phone: 703-542-3835
Email: *kelly@appa.org*

Director of Membership and Outreach
Kristin Witters
Phone: 703-542-3832
Email: *kristin@appa.org*

Standards and Codes Administrator
Billie Zidek
Phone: 703-542-3846
Email: *billie@appa.org*

Photos by Mike Dosik

The Age of Acceleration

By E. Lander Medlin

In the November/December 2016 issue of *Facilities Manager*, I wrote about the "game changers" of technology, space management, and performance metrics and data analytics. At the time I didn't truly understand the real rate and pace of technological "change" and its dramatic effect on the "game." So what changed?

In December, I took a break from the day-to-day demands of work and the holiday rush and read a book entitled *Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Acceleration*, written by Thomas L. Friedman (New York *Times* columnist, three-time Pulitzer prize winner, and author of numerous books, most notably *The World Is Flat*). Quite simply, I was blown away and immediately realized the world I thought I knew no longer exists!

THE SINGLE GRAIN OF RICE

Technological advancements defined by Moore's Law are dramatically transforming every aspect of our lives. Then, add the two other largest driving forces on the planet, the globalization of markets and rapid climate change/biodiversity loss. And voila, you have an unprecedented, accelerated, albeit exponential rate and pace of change(s). Although our lives are undergoing drastic change, we are actually living in incredibly interesting times! Yet, few of us have paused long enough to take note, assess, consider, or even think about this historic moment in time.

Why is Moore's Law so important? In 1965, Moore's Law posited the speed and power of computational processing power would double every two years for only slightly more cost with each new generation. It has held that pattern for 50 years. Friedman provides an excellent illustration of this kind of exponential growth recalling this story:

> *"The famous legend of the king who was so impressed with the man who invented the game of chess that he offered him any reward. The inventor of chess said that all he wanted was enough rice to feed his family. The king said, 'Of course, it shall be done. How much would you like?' The man asked the king to simply place a single grain of rice on the first square of a chessboard, then two on the next, then four on the next, with each subsequent square receiving twice as many grains as the previous one. The king agreed without realizing that 63 instances of doubling yields a fantastically big number: something like 18 quintillion grains of rice. That is the power of exponential change…that's what is happening with technology…AND,* Moore's law just entered the second half of the chessboard!"

ENTER THE AGE OF ACCELERATION

As humans, we perceive and naturally experience change in the world as linear, yet it's now occurring

exponentially. Further to the point, Qualcomm's motto is "Lives are changed when people connect. Life is changed when everything is connected." That is also happening within Moore's Law. It's not just the computational speed of microchips but every other component of the computer (integrated circuits, memory units, networking systems, software applications, and the sensors), all melding into "the cloud"; all available via your smartphone– your handheld computer! Change so fast it is outstripping the speed human beings, institutions, and societies can normally adapt.

So, if, like me, you didn't see it coming, that is quite understandable. And how could you? The three largest forces on the planet are all accelerating at once, exponentially, and interdependently. But, we haven't seen anything yet! Indeed we are experiencing the feeling of *dislocation* (unlike disruption), which means the whole environment is being altered so quickly that we feel we can't keep up. The cultural angst we feel prevents us from fully benefiting from new technologies, and makes it difficult to consciously manage the very real, unintended consequences on humans who are no longer just part of nature, but now a force *of and on* nature.

Ray Kurzweil, director of engineering at Google, stated,

> *"We're entering an age of acceleration. The models underlying society at every level, which are largely gauged on a linear model of change, are going to have to be redefined. Because of the explosive power of exponential growth, the 21st century will be equivalent to 20,000 years of progress at today's rate of progress; organizations (*and individuals) *have to be able to redefine themselves at a faster and faster pace."*

As uncomfortable and disconcerting as all this may be, we must adapt—and we can, in a number of ways! In fact, there are many opportunities. What can we learn?

- Opt to pause and reflect to better understand and engage productively. Ralph Waldo Emerson put it best, "In each pause I hear the call." We have to give ourselves permission to slow down. Knowledge is only good if you can reflect on it.
- Our lifelong working capacity requires lifelong learning in order to increase our ability to adapt.
- Use sensor data from the IoT (Internet of Things) to look for patterns before they cause problems, then loop back for preventive and prescriptive action rather than "condition-based maintenance," and correspondingly save time, money, and energy, increase productivity, and take out the guess work.
- As for Big Data, use that bigger memory, more intensive computing, with the power, efficiency, reliability, and software innovations to connect in ways to make data searchable and find those proverbial needles in a haystack.
- Use these abilities to generate and apply knowledge for faster, better decisions.
- Rewire organizational tools and institutions to keep pace; adapting even slightly will make a huge difference.
- To navigate this "white water"–Fail fast! Get more agile, optimize for learning, be willing to experiment and learn from mistakes, and continuously reevaluate to create "dynamic stability." We cannot slow it down. As experienced kayakers know, says Friedman, you need to "keep paddling to maintain your stability through rapids…you want to move as fast, or faster than the current, otherwise you lose momentum and that makes you more vulnerable to flipping over."
- Innovate, innovate, innovate! Reimagining, reinventing, redesigning, reshaping, and redefining the workplace, our institutions, and our lives.

A NEW GROWTH MODEL

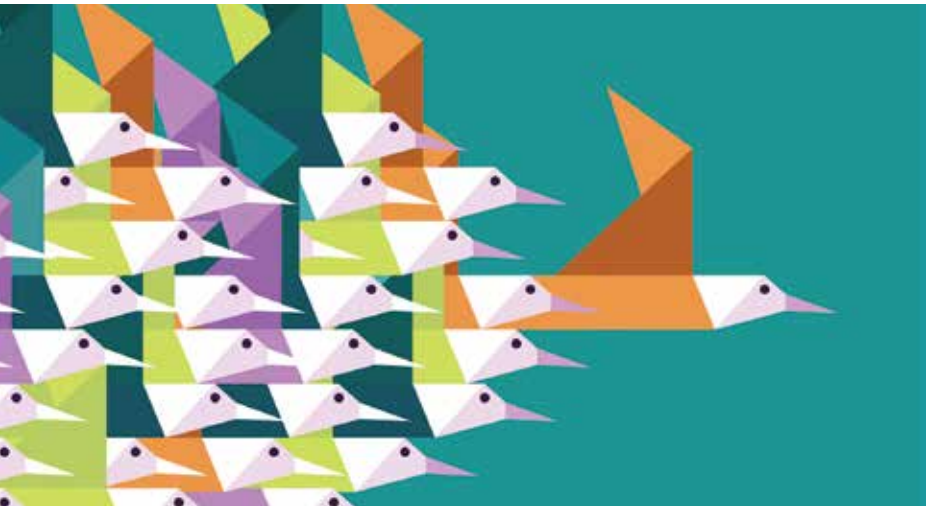
So, under our noses and over the course of the last 10 years (with the year 2007 considered the inflexion point), we have moved from a service economy to a "knowledge-human" economy focused on human capital—people—their talent, technical skills, tacit know-how, and creativity, and their social skills like cooperation, empathy, and flexibility. Now the growth model is based on the targeted and strategic investment in people.

We need to use these skills and capabilities to connect, collaborate, and create through every aspect of life, within our educational institutions, the marketplace, and through associations like APPA where a creative network of professional connections and collaborations abound. As Marie Curie said, "Nothing in life is to be feared, it is only to be understood." APPA stands ready to help improve your understanding to navigate through these rapidly changing currents.

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

Leadership in a Volunteer Organization

By James L. "Jay" Williams Jr., P.E., CEFP



When asked to write an article for *Facilities Manager* magazine, several topics made it onto my notepad. The one that I want to present to you deals with leadership in a volunteer organization. As we move through our professional lives, we have the opportunity to be involved in organizations in our community, in our state, and in our profession. The success of these groups rests on the shoulders of staff and volunteers—and having the ability to energize and motivate these people for the good of an organization and move them toward a common set of goals can sustain it for years to come.

When I stepped into the role of SRAPPA president in 2013, I presented my vision and goals for the upcoming year to the conference attendees. I share some of my notes from that night with you here:

- **Emphasize Communication:** The need for effective communication within your organization should be at the top of your list. Geographical separation can be a challenge, but with consistent communication you can bridge the gap. Monthly teleconference calls with your board, president's messages, and best wishes for a safe and happy holiday will help build synergy and establish a cohesive organization.
- **Promote Education:** With shrinking budgets, it is difficult for organizations to train and educate their most valuable asset—the people. Look at ways to financially support the educational needs of your organization. Take advantage of scholarships, conferences, and workshops that will allow your staff to acquire valuable information to bring back to your institutions and help them to make connections with others to benchmark ideas. In today's environment, when salary adjustments are not realized, training and education are the next best alternatives.
- **Become Part of the Team:** Lead by example. Create an atmosphere that people will want to be a part of, and step up and serve in a leadership role. It is so important to show the benefits of being associated with your organization. When the word gets out, watch out, your organization will be moving in the right direction.
- **Recognize Great Work:** The opportunity to do so is there for the taking. If you don't take it, you have missed out. Identify and take the time to recognize members of your team for the exceptional work they do in their respective professions. Sometimes, this may involve a one-on-one conversation, reaching out during an office call, or recognizing someone at a conference. Do not let the chance get away from you. There is nothing more rewarding than watching a member of your team walk up on stage to receive the recognition he or she has earned through their hard work and dedication.
- **Recruit the "Best of the Best" to Serve:** Remember, there is always someone out there who is chomping at the bit to serve! You just have to go

out and find them. Once you have, establish clear lines of responsibility and give them the authority to make things happen. It is important to listen and offer support to help them avoid volunteer burnout. On the flip side, there are challenges that can present themselves when those who have volunteered don't carry out their assigned duties and responsibilities. When faced with this situation, keep in mind compassion for the individual and the fact that no one wants to be labeled a quitter. A simple conversation could reveal family- or job-related struggles as the root cause, and showing understanding will allow the individual to either refocus on his or her responsibilities to the organization or step down with dignity.

CLOSING THOUGHTS

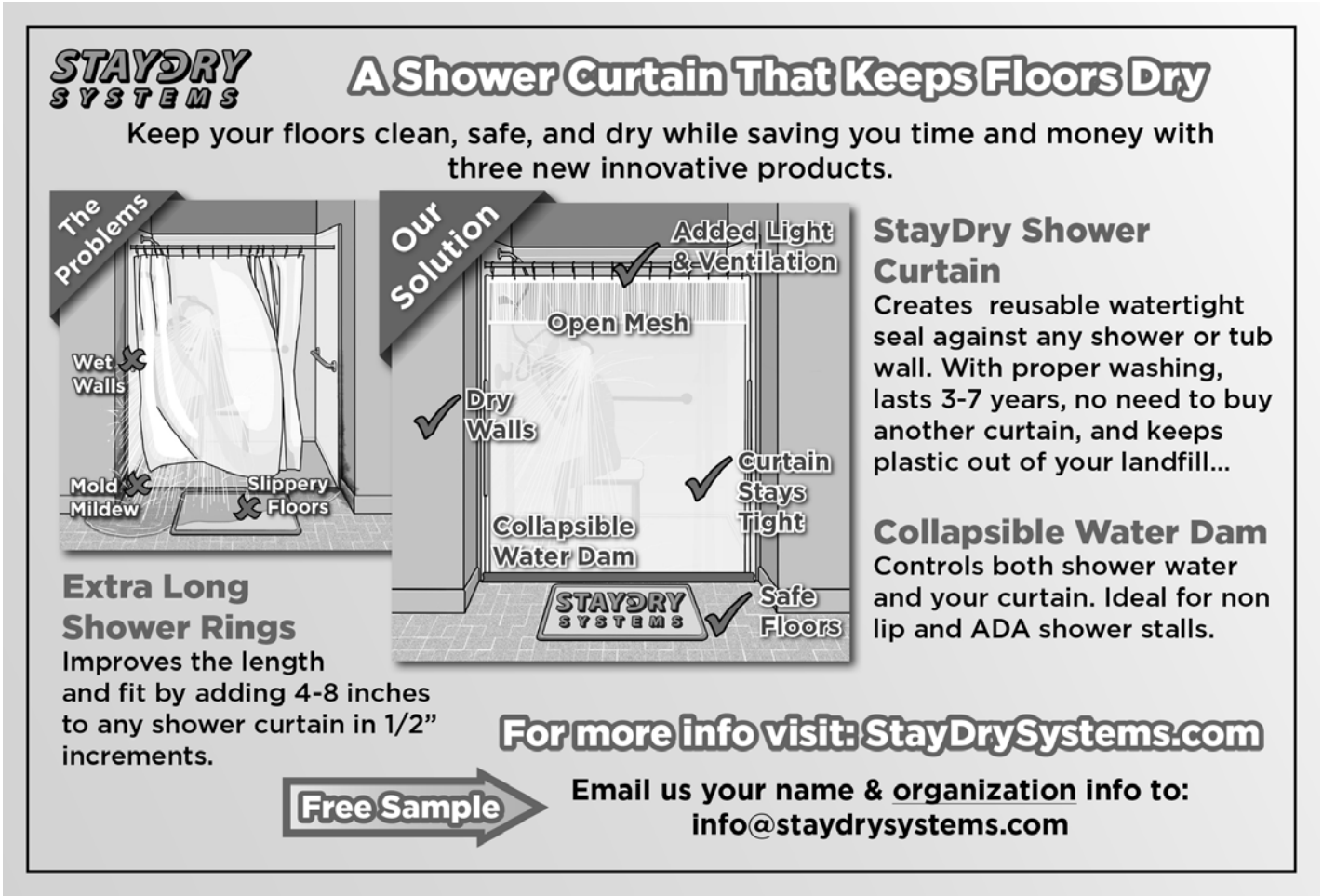
I had the fortunate opportunity to speak with Jim Melton, a nationally renowned speaker and commercial pilot who spoke at APPA 2016, and also with Peter Strazdas, Immediate Past President of APPA International. In our conversations, they shared similar ideas about leadership, but in slightly different packaging.

Melton gave me three basic principles of leadership: 1) If things sit too long, they get off the rails; 2) we don't often get what we expect, we get what we inspect; and 3) a goal has to be set in motion, but once in motion, it has to be tweaked. Think about it.

Peter Strazdas talked to me about "touchpoints," a concept that really hits home. In order to lead and sustain a volunteer organization and keep its members engaged and motivated, you have to set a clear vision and goals, step back and assess, and adjust for the good of the organization.

And last but not least, one very important leadership principle to keep in mind is this: In the end, both you and your organization need to have fun and to enjoy what you're doing.

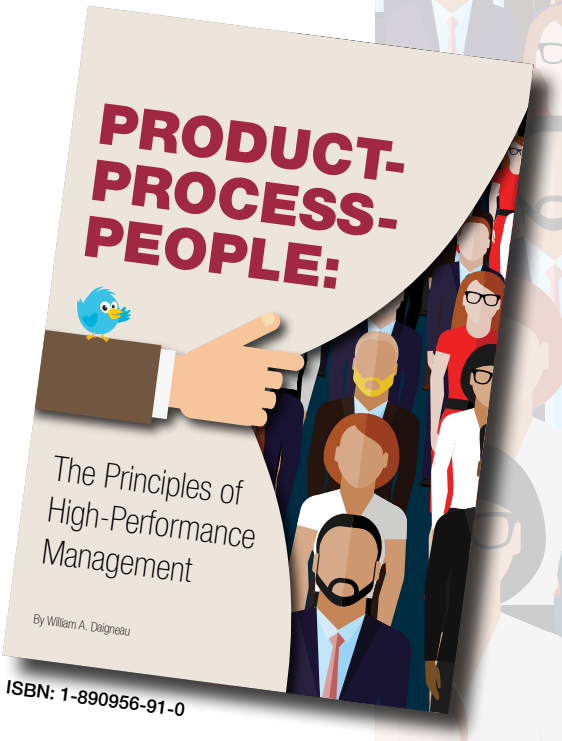
Jay Williams is post engineer at Virginia Military Institute in Lexington, VA and can be reached at *williamsjl@vmi.edu.* He also serves as Senior Representative Vice Chair to APPA's Executive Committee. This is his first article for *Facilities Manager.*



Get Your Copy of APPA's Newest Publication!

PRODUCT-PROCESS-PEOPLE:

The Principles of High-Performance Management



ISBN: 1-890956-91-0

By William A. Daigneau

"In management, becoming a good or great manager really is a matter of learning on the job. Why? Because in the field of management, there is no one set of principles that leads to great results if applied consistently, as you'll find in the physical sciences.

Thus began my quest to discover the laws of management—to find principles similar to the laws of physics—that when consistently applied would lead organizations to great success. Principles that were understandable and could be applied by anyone. If such principles existed, then anyone could lead a business or an organization and achieve exceptional results without wasted effort and inefficiency.

The reason why most management theories don't work is because they don't connect the dots. This book is an attempt to do so.

Bill Daigneau is a Colorado-based consultant and writer who retired in 2012 from the University of Texas MD Anderson Cancer Center in Houston, Texas, where he served as vice president and chief facilities officer. He is an APPA Fellow and a four-time recipient of APPA's Rex Dillow Award for Outstanding Article.

APPA
LEADERSHIP IN EDUCATIONAL FACILITIES

To purchase your copy, visit
appa.org/bookstore

Change, for the Better

By Kristin Witters

In today's environment, consistently updated and accurate data is important to the success of any organization. By extracting and dissecting data, APPA is able to gain a better and more comprehensive picture of all those we serve, along with the most actively engaged in APPA, the regions and chapters, and other potential members/customers.

With this in mind, APPA made the decision to launch and embrace newer technologies by purchasing a more robust association management system (AMS). This transition to a turnkey system is critical to APPA's success in providing our members with a more enhanced experience when utilizing portions of our website, and the "myAPPA" web portal.

GOING LIVE

Over the past year and a half, the APPA staff, in conjunction with our service provider, has been diligently hard at work building and converting our data infrastructure and datasets into this new AMS. With much anticipation and excitement, the APPA staff were able to successfully go live with our new system in mid-December.

In doing so, APPA made the transition from its old database system to a new AMS. This has resulted in numerous enhancements and positive changes to various areas of the APPA website, with more to come when additional phases roll out. During the transition, and certainly moving forward, APPA staff is available for assistance in navigating the new myAPPA and any other areas of the APPA website. Please don't hesitate to call or email us—we are here to help! Additionally, we will be providing you with tutorials and detailed directions on how to maximize your membership/customer experience.

THE SAME, YET BETTER

By now, I hope I have piqued your curiosity. Take a minute to open myAPPA (*www.appa.org/login.cfm*). All of your information remains the same, yet once you log in, you will notice a few helpful changes. As you look to renew your APPA and regional membership, purchase one of our many publications, or register for an APPA event, you will see a slightly different look and feel to the process on myAPPA.

MyAPPA will serve as your one-stop shop for membership renewal, publications and subscriptions, certification, transcripts, and registration for any professional development event. You will be able to see a more comprehensive view of your membership engagement with APPA, as well as customize your communication preferences and help us tailor communications and programs to *you*—based on your area of specialization and your role at your campus.

We see this enhancement as a positive change for all of our members and customers. Our goal is not only to show you the value of membership and participation, but to enhance and transform the way you engage with APPA and the regions/chapters. We hope you will complete your full profile and explore your new myAPPA. This is *your* association, and we hope that you join us in this leap forward.

Kristin Witters is APPA's membership director and can be reached at *kristin@appa.org*.

2016 Regional Reports

Eastern Region ERAPPA

By Beth Clark
ERAPPA President
Pennsylvania State University

President Steve Peary

Photos by Pinpoint Photography

Above: Participants were actively engaged in the breakout session on influential storytelling.

Left: The 2016-2017 ERAPPA Board of Directors.

Nearly 500 participants representing 125 educational institutions attended the 2016 ERAPPA Annual Meeting in **Niagara Falls, Ontario** from October 16-19. The conference theme was "Navigating in a Climate of Change." Keynote speaker Dr. Dave Williams—Canadian astronaut, aquanaut, and physician—spoke to the assembled audience about taking chances and managing risk. Plenary speaker Greg Johnson, a well-known Canadian storm chaser, captivated the audience with his stunning storm photography and his message of embracing passions to leave a legacy.

The 2016 conference was hosted by the Ontario Chapter of APPA (OAPPA) under the leadership of Richard Francki (York University) and Ron Swail (University of Toronto). The host committee created an engaging and thought-provoking educational program that included a five-track professional development program, APPA's Supervisor's Toolkit, a Hall of Resources with a variety of business partners, and an evening of networking and local cuisine amid some of Niagara Falls' most popular attractions.

There were five board members elected at the Annual Business Meeting on Tuesday afternoon. Kevin Mann (Salisbury University) was elected president-elect, Jessica Abbott (University of Hartford) was elected vice president for professional development, Patty Smith (New Jersey City University) was elected vice president for membership, Matthew Yencha (Cedar Crest College) was reelected vice president for annual meetings, and Jonathan Terry (Quinnipiac University) was elected secretary. Also at the business meeting, all of ERAPPA's professional development scholarships were awarded and bylaw changes (minor, clarifying edits) were passed.

At the Awards Banquet, Certificates of Appreciation were awarded to outgoing chapter presidents, ERAPPA committee members, and host committee members. Merit Awards were given to the host committee chair, outgoing ERAPPA liaisons to APPA committees, and outgoing board members. Jessica Abbott, Peyton Gibson (University of Rhode Island), and Kevin Simpson (University of New Brunswick–St. John) were recognized with ERAPPA's Rising Star Award. Andrew Feick (Temple University) was awarded ERAPPA's Chapter Champion Award for the Delaware Valley Chapter of APPA (DVAPPA). ERAPPA President Beth Clark bestowed President's Awards upon Larry Fitzgerald (TRC Environmental), Michelle Frederick (American University), and Arthur Walsh (University of New Brunswick–Fredericton).

Steve Peary assumed the role of ERAPPA president at the end of the annual meeting. Peary spoke of his motto for the coming year—sustainment—and how it applies to ERAPPA and the perpetuation of the organization's strategic plan, as well as how it applies to individual members through the pursuit of professional development opportunities.

THE 2016-2017 ERAPPA OFFICERS

President—**Steve Peary**, University of Vermont
President-Elect—**Kevin Mann**, Salisbury University
Secretary—**Jonathan Terry**, Quinnipiac University
Treasurer—**Arthur Walsh**, University of New Brunswick–Fredericton
APPA Senior Representative—**Beth Clark**, Penn State University
APPA Junior Representative—**Steve Peary**, University of Vermont
APPA Liaison—**John Bernhards**

To view ERAPPA's website and find a complete listing of the board of directors, please go to *http://www.appa.org/regions/erappa.cfm.*

2017 CONFERENCE: October 29-November 1, 2017 · Washington, DC

Southeastern Region SRAPPA

By Brian Wilcox
SRAPPA Vice President for Communications
University of Memphis

Photos by Rhonda Hole

2016-2017 SRAPPA Board.

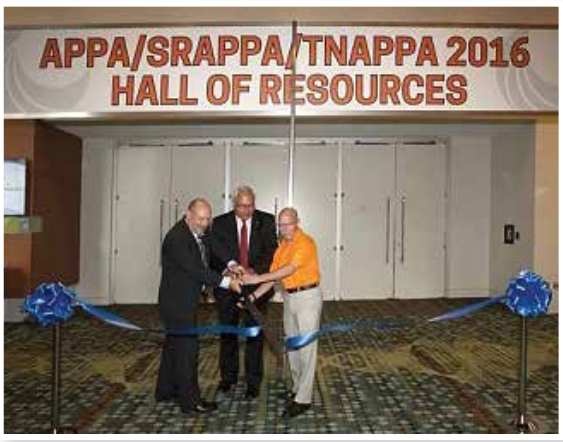
President Dan Wooten.

More than 185 participants representing 38 institutions had the opportunity to attend 57 educational sessions with 128 business partners at this year's 2016 Tri-APPA Conference July 12-14, 2016 in **Nashville, Tennessee**. This was SRAPPA's 65th annual conference and it was an historic event jointly hosted by APPA, SRAPPA, TNAPPA (Tennessee APPA), and Tennessee State University.

The conference theme was "Partnering for Historical Success." The host committee delivered an engaging and intriguing program, bringing many of the national conference benefits of venues, connections, guest speakers, and training opportunities to our regional and state chapter attendees. Every day of the conference was filled with opportunities to engage with and learn from one another, and to connect with a variety of business partners in the Hall of Resources.

The SRAPPA Breakfast and Governance Meeting concluded the week as the outgoing SRAPPA president, Dave Maharrey, recapped the region's successful year and recognized board members who received the SRAPPA President's Award for their service to the board: Wayne Goodwin, Gerald Grimes, and Kelly Ostergrant. The SRAPPA region also recognized those who received APPA awards for 2016:

- **Distinguished Leadership and Ethics Award:** Jack Colby, North Carolina State University
- **Meritorious Service Award:** Daniel Young, Norfolk State University
- **Pacesetter Award:** Dan Wooten, Tennessee State University
- **Unsung Hero Award:** Ada Baldwin, North Carolina State University
- **Sustainability Award:** Elon University, Spelman College, and University of Virginia
- **Effective and Innovative Practices Award:** Emory University and University of Alabama



2016 Tri-APPA Conference Ribbon Cutting.

Peter Strazdas, APPA Immediate Past-President, installed the 2016-17 SRAPPA Board. Dan Wooten, incoming president, concluded the governance meeting by highlighting some of the historic episodes of the conference. He also challenged his SRAPPA colleagues to do their part this coming year to expand membership and to engage in this great organization and in the profession as a whole.

THE 2016-2017 SRAPPA OFFICERS

President—**Dan Wooten**, Tennessee State University
President-Elect—**David Smith**, University of North Carolina Charlotte
First Vice President—**Tom Jones**, Clemson University
Treasurer—**Becky Griffith**, Embry-Riddle Aeronautical University
APPA Senior Representative—**Jay Williams**, Virginia Military Institute
APPA Junior Representative—**Jodie Sweat**, Kennesaw State University
APPA Liaison—**Steve Glazner**

To view SRAPPA's website and find a complete listing of the board of directors, go to *http://www.appa.org/regions/srappa.cfm.*

2017 CONFERENCE: October 25-28, 2017 · Charlotte, North Carolina

Midwest Region MAPPA

By Becky Guelig
MAPPA Communications Coordinator
University of Wisconsin Madison

Photo by Becky Guelig

Supervisor's Toolkit, hosted at 2016 MAPPA Annual Conference.

Photo by James Bogan

MAPPA 2016-2017 Board.

It has been another exciting year for MAPPA! At the start of 2016, MAPPA President Greg Adams (Marquette University) set aggressive goals to promote MAPPA engagement and development. This resulted in MAPPA successfully awarding 123 credentialing scholarships in collaboration with Michigan APPA (MiAPPA), creating a fresh MAPPA website, and accomplishing six Drive-In Workshops.

In tandem with these accomplishments, hosts Maggie Hamilton, Jody Danielson, and Gina Holtzbauer of Iowa State University organized the 2016 MAPPA Conference. Needless to say, they rocked the conference! It was held October 1-5, in **Des Moines, Iowa**, and attracted 356 attendees, half of whom were first timers, as well as 63 business partner exhibits and 34 institutions.

Training sessions such as "Women in Facilities" and "Engaging and Motivating Today's Workforce" supported this past year's MAPPA goal of enhancing diversity within MAPPA. Keynote speakers Sam Glenn and Jeff Johnson provided refreshing and inspiring talks. Glenn reminded MAPPA to "serve people with our best," and Johnson emphasized the teaching of "conscience" as we "influence the people we guide and the people we serve." MAPPA was able to raise $2,295 during the conference to donate to the Animal Rescue League of Iowa.

We celebrated the many awards that MAPPA members and institutions received this year:

- **APPA Pacesetter Award:** Dana Gillon
- **APPA Unsung Hero Award:** Maggie Hamilton
- **APPA Award for Excellence:** Ohio State University
- **APPA Sustainability Award:** Ohio University and University of Michigan
- **APPA Effective and Innovative Practices Award:** Michigan State University
- **MAPPA President's Awards:** Sarah Ely, Becky Guelig, and Mike Hamilton

MAPPA welcomed Dr. Joseph Han as the new MAPPA president-elect. We celebrated the transition of Kristie Kowall (Illinois State University) to the chair of the APPA Regional Representatives after eight years of service on the MAPPA board, and Kris Ackerbauer's (University of Wisconsin) transition off the MAPPA board after 16 years of service and hosting two regional conferences. Both Kristie and Kris have done exceptional work, and we are so grateful!

Tim Thimmesch assumed the role as the new MAPPA president and shared his teaching, learning, and collaborative (TLC) approach to support emerging professionals within MAPPA for the upcoming year. He emphasized MAPPA's continued support for the growth of credentialing, mentor relationships, and exceptional training opportunities. We then literally rocked the conference with "The Essentials" and their live rock 'n' roll performance.

THE 2016-2017 MAPPA OFFICERS

President—**Tim Thimmesch**, Grand Valley State University
President-Elect—**Dr. Joseph Han**, Cleveland State University
Secretary—**Bob Currie**, Iowa State University
Treasurer—**Dana Gillon**, University of Illinois at Urbana–Champaign
APPA Senior Representative—**Lowell Bromander**, Hamline University
APPA Junior Representative—**Mike Hamilton**, Iowa State University
APPA Liaison—**Suzanne Healy**

To view MAPPA's website and find a complete listing of the board of directors, go to *http://appa.org/regions/mappa.cfm*.

2017 CONFERENCE: September 17-21, 2017 · St. Louis, Missouri (joint conference with CAPPA)

Central Region

CAPPA

By Sheila Awalt
CAPPA Secretary
University of Texas at El Paso

Photos by Miles Abernathy

Left: 2016 CAPPA Executive Committee members.

Right: CAPPA Conference Participants.

Below: Attendees visit the Emerging Analytics Center.

The University of Arkansas at Little Rock (UALR) hosted the CAPPA 2016 Educational Symposium and Business Exposition from October 8-12, 2016 in **Little Rock, Arkansas**. The theme was "CAPPA 2016: Energizing Your People and Utility Plants." During the opening general session, keynote speaker and author Cory Bouck spoke on how to "Energize Your People with the 4 Secret Skills of Followership." Cory shared lessons he's learned over his career in leadership as a U.S. Navy officer, brand manager, and director of organizational leadership and learning (*www.corybouck.com*).

CAPPA 2016 offered 26 sessions ranging from facilities administration and personnel management to maintenance, project management, and utility management. Tours of the UALR campus gave participants a firsthand look at their unique facilities, including heat pump chiller/heaters, and a perspective on their innovative solution for cutting utility costs by almost 5 percent. The tour also provided a peek into UALR's academic work in the Emerging Analytics Center (data analytics plus virtual reality) and Center for Integrative Nanotechnology Sciences. We also offered APPA's Academy on Campus—Leadership Track II training.

Business partners staffed exhibits geared to the needs and interests of CAPPA members. Several business partners sponsored prizes, lunches in the exhibit hall, and other networking opportunities throughout the conference.

Before the exhibit hall opened Sunday evening, attendees could join in a golf tournament at the scenic Greystone golf course, or tour the Hot Springs National Park. On Monday evening, dinner was held at the Clinton Presidential Library with museum access.

Entertainment for the Tuesday night banquet was Kevin Delaney of the Museum of Discovery in Little Rock. With support from the museum, Kevin is also the "Science Guy" for *The Tonight Show Starring Jimmy Fallon*.

APPA President Chuck Scott assisted in recognizing CAPPA award winners: Distinguished Member, Robert Eckels; Presidential Award, J. B. Messer and Art Jones; Certificate of Meritorious Service, Sue-Anna Miller and Jeff Flathman; and Newsletter, Shelton Riley.

APPA President Chuck Scott inducted CAPPA's executive committee for 2016.

THE 2016–2017 CAPPA OFFICERS

President—**Ian Hadden**, University of Arkansas at Little Rock
First Vice President—**Angela Meyer**, Southeast Missouri State University
Secretary—**Sheila Awalt**, University of Texas at El Paso
Treasurer—**Angie Mitchell**, Southeast Missouri State University
APPA Senior Representative—**David Handwork**, Arkansas State University
APPA Junior Representative—**Glen Haubold**, New Mexico State University
APPA Liaison—**Christina Hills**

To view CAPPA's website and find a complete listing of the board of directors, visit *http://www.cappaedu.org*.

2017 CONFERENCE: September 17-21, 2017 · St. Louis, Missouri (joint conference with MAPPA)

Rocky Mountain Region

RMA

By Rachel Stone
RMA Communications Coodinator
University of New Mexico

Images courtesy of RMA.

Above: With the Grand Canyon only an hour away, many RMAers took in the marvelous views before the conference kicked off.

Right: NAU "jokers" wow the crowd with wild, carnival-inspired tricks.

Flagstaff, Arizona was an ideal location to hold the RMA Annual Meeting this year. The Northern Arizona University (NAU) campus allowed for spectacular views, pleasant temperatures, and facilities that were exactly what was needed for the diverse events.

RMA 2016 was held September 26-28, and was packed full of programming designed to develop facilities professionals with regard to leadership, technology and strategies, maintenance innovation, and sustainability. There was also a lot of fun to be had at the theme dinner, banquet, and networking events. This year's theme dinner was an indoor carnival with Cirque de Soleil-style acrobats, jokers, savory food such as ribs, bison, and brisket followed by desserts of cotton candy, deep-fried Twinkies, and candy bars. RMAers enjoyed the Grand Canyon tours or golfing on the Networking Day, and the Welcome Reception had a Jamaican feel with its unique cuisine and NAU's steel drum band creating the ambiance.

The organization of events proved to be well thought out, with many opportunities for the membership to mingle and learn from one another as well as engage with the business partners' expertise. The Host Committee brought in two exceptional keynote speakers: Jason Young, author and consultant, who enthusiastically provided his insight on "Leadership and Customer Service" based on his experience with Southwest Airlines, and Tyler Gage, co-owner of RUNA, a revolutionary tea company utilizing the traditional Amazonian leaf guayusa, which provides a clean, focused energy unlike any caffeinated drink on the market. Both of these keynote speakers suggested that leadership and greatness come from being innovative, brave, and willing to learn.

For the Awards Banquet, the hosts treated the attendees with a delicious meal and entertainment by a throwback band singing old classics like "Sleep Walk" and "House of the Rising Sun." Before the fun began, several awards and recognitions were given by outgoing RMA President David Turnquist:

- H. Val Peterson Award—John Morris
- Lee Newman Award—Spirotherm
- RMA President's Award—Brian Johnson and Lisa Potter

Turnquist acknowledged that the RMA region continues to lead APPA with EFP/CEFP credentials support, before handing the gavel over to the new RMA president, Lisa Potter.

THE 2016-2017 RMA OFFICERS

President—**Lisa Potter**, University of Colorado Boulder
President-Elect—**Luis Rocha**, University of Arizona
Secretary—**Wim Chalmet**, University of Lethbridge
Treasurer—**Mary Jane Thompson**, Salt Lake Community College
APPA Senior Representative—**Emmet Boyle**, University of Regina
APPA Junior Representative—**Dave Turnquist**, University of Colorado Denver
APPA Liaison—**Kristin Witters**

To view RMA's website and find a complete listing of the board of directors, go to *http://appa.org/regions/rma.cfm.*

2017 CONFERENCE: September 18-20, 2017 · Jackson, Wyoming

Pacific Coast Region

PCAPPA

By John Ferris
PCAPPA President
San Diego State University

PCAPPA Board members (left to right): Jason Wang, Patty Anderson, Bob Andrews, Winnie Kwofie, John Ferris, International President Chuck Scott, Tony Guerra, Chuck Davis, and Tony Ichsan.

The 2016 PCAPPA Educational Conference was held September 18-20 in **Pasadena, California**. We had some fun with the "three Rs" of education—our meeting theme actually had four: "Resource, Ready, Renew, Reengage!" The conference was attended by over 240 enthusiastic individuals. Besides the 28 educational tracks offered, 27 participants graduated from the Supervisor's Toolkit and 4 earned CEFPs.

We had two great speakers: Our kickoff keynote address was given by Adam Steltzner, team leader and chief engineer of the NASA Mars Rover Curiosity. Steltzner discussed the power of human curiosity and the importance of fostering a culture of collaborative innovation. He reminded us that with the "right kind of crazy," we can significantly expand our boundaries and achieve the impossible.

Our second keynote, Jesus M. Villahermosa Jr., presented "Crisis Reality Training" in a two-part presentation. This talk dealt with the many facility issues during an active-shooter situation; the talk was tough and informative, and audience participation was exceptional, with questions continuing long after the applause had ended.

Our awards night was well attended due in part to the repeat performance of MC Jason Wang, PCAPPA's awards and recognition chair, who kept the momentum with his own inimitable style and provided top entertainment. The following were given awards or recognized that night: The APPA Sustainability Award went to Portland Community College, the APPA Pacesetter Award to John Ferris, and the APPA Unsung Hero Award to Chuck Davis. PCAPPA Certificates of Appreciation were given to David Woodson, APPA Senior Representative for 2015-16, and to the Cal Tech Conference Team. Bill Taylor was named conference host chair.

Tony Ichsan speaks to attendees.

Photo by Patty Anderson

PCAPPA Conference Dinner.

APPA International President Chuck Scott performed the induction of officers, which ended with the new board being confirmed by saying, "OK, I'll do it!"

The gathering ended with a special video highlighting the next PCAPPA Educational Conference, which will be cohosted with APPA and BayAPPA in San Francisco, July 21-23.

THE 2016-2017 PCAPPA OFFICERS

President—**John R. Ferris**, San Diego State University
President-Elect—**Robert Andrews**, California State University East Bay
Secretary—**Tony Ichsan**, Portland Community College
Treasurer—**Tony Guerrero**, University of Washington Bothell and Cascadia Community College
APPA Senior Representative—**Tony Ichsan**, Portland Community College
APPA Junior Representative—**Chuck Davis**, Seattle Central College
APPA Liaison—**Kristin Witters**

To view PCAPPA's website and find a complete listing of the board of directors, visit *http://www.appa.org/regions/pcappa.cfm*.

2017 CONFERENCE: July 21-23, 2017 · San Francisco, California (joint conference with APPA and BayAPPA)

The brand name products you need, when you need them.

We've spent over 60 years perfecting our process and product offerings, while building a coast to coast supply chain that ensures we get our customers what they need, when they need it. It's why we're focusing those resources and expertise to become your trusted property and facilities maintenance partner.

Browse our interactive facilities supply catalog to see more than 27,000 products by visiting: **FERGUSON.COM/FSC**
Call us today: (888) 334-0004

FERGUSON®
FACILITIES SUPPLY

©2016 Ferguson Enterprises, Inc. 1116 319242

Critical Questions

Aerial view University of North Carolina Chapel Hill.

Space in any campus environment—college, university, school, museum, corporate—has both a cost and a value. Legacy office and lab space, hoarded and sometimes even hidden, is becoming a thing of the past. Our campus leadership has moved more determinedly toward asking the right questions that aid them in providing clear, fair, and effective space management and utilization services to the campus community.

Six top issues relating specifically to space in higher education, along with critical questions for institutional dialogue, were published by APPA in the 2012 Thought Leaders report, *Campus Space…An Asset and a Burden*. The issues and questions remain relevant and are worth reprinting here. They are intended to guide facilities managers and university leaders in the discussions at their own institutions, and to help individual colleges and universities assess where they stand and help them develop strategies for the future.

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.

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?

for Space Management

From APPA's Thought Leaders Series

- 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?

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.

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.

- Reach out to the right people.
- Gather data about the value of space to make your case.

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?

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.

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?

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.

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.

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?

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.

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

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.

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?

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.

Strategies:

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

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?
- 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?

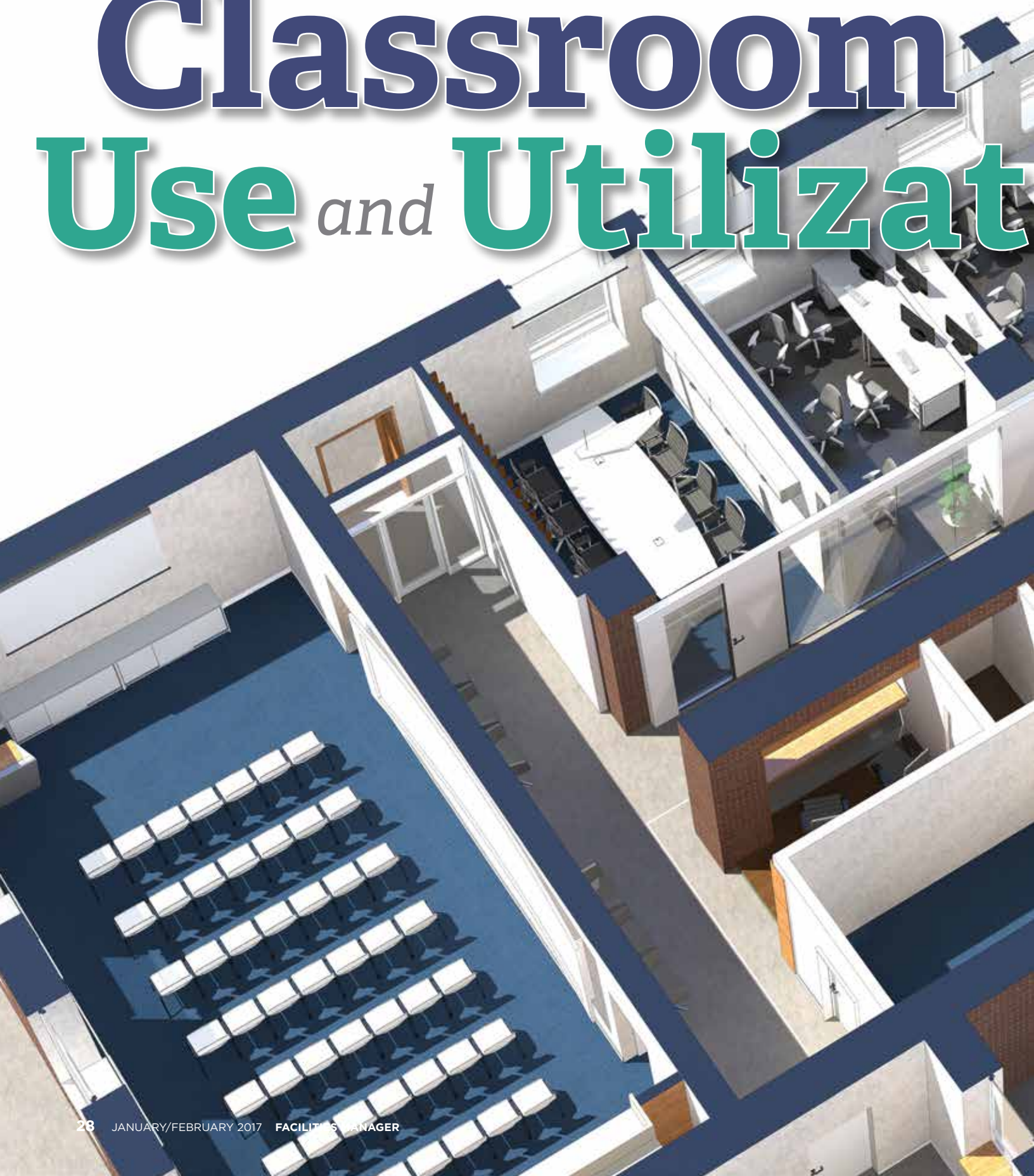
CONCLUSION

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.

To receive a free download of the full 2012 Thought Leaders report, *Campus Space…An Asset and a Burden*, or any of the APPA Thought Leaders reports, go to *www.appa.org/research/cfar/tls.cfm*.

APPA developed the Thought Leaders Series, a program of the Center for Facilities Research, to conduct dedicated discussions on the future of higher education and the impact of that future on educational facilities. The 2012 report was sponsored in part by Jacobs and DTZ.

Classroom Use and Utilizat



ion

by Ira Fink, Ph.D., FAIA

Improving classroom and class laboratory use and utilization has been and remains an important issue for many campuses. To help planners measure classroom and class laboratory use, 15 years ago I authored two articles ("Classroom Use and Utilization" and "Class Laboratories: Space Use and Utilization") for APPA's *Facilities Manager*.[1] This article augments what we knew then with what we have since learned and offers some additional suggestions for improvement.

This article covers three areas of classroom and class laboratory use: 1) metrics—the historical basis for measurements, which serve as both an archival record and provide a context for classroom use analysis; 2) measurements—data and findings from recent classroom use studies that provide new information for understanding instructional space use and the factors that influence it, including decisions on course and classroom scheduling and management; and 3) management—ideas for improving classroom use and utilization.

THE HISTORY

The metrics related to space and utilization were shaped by the education environment at the time they were developed; these metrics have had a long-lasting impact on higher education.

The Academic Course Metric

The academic course, which is the basic building block of instructional space use analysis, had its origin in 1906 when the Carnegie Foundation for the Advancement of Teaching created a pension system for the nation's college professors. To participate in the Carnegie pension system, higher education institutions were required to adopt a set of basic standards around courses of instruction, facilities, staffing, and admissions criteria.[2]

One of the Carnegie core elements was the concept of a "credit hour." As a metric, the credit hours students receive toward their degree were based on the number of contact hours they spent per week in class per semester. A typical three-credit course typically would meet for three hours per week over a 15-week semester. And thus, the one-hour class metric was born more than 100 years ago.

Classroom Space Metric

In 1923, the City of New York sponsored a survey of junior high schools and their space needs,[3] including a preliminary analysis linking space to educational requirements. This study was followed in 1924 by a report on high school programs published by the Teachers College of Columbia University.[4] According to the report's author, "the capacity of each classroom and study hall were determined on the basis of 15 square feet of floor space and 200 cubic feet of air for each student." With this narrative, the metric of 15 square feet per student in classroom space began, based on how students in New York City high schools were being educated.

Classroom Space Needs

Two decades later, the metric of space per student emerged from two studies of higher education space needs in California. The first, known as the "Strayer Committee Report," published its recommendations in 1948 in *A Report of a Survey of the Needs of California in Higher Education*.[5]

In the *Restudy of the Needs of California in Higher Education* published in 1955 by the California State Department of Education,[6] empirical data on classroom use in 1953 on the University of California (UC) and the California State Colleges (CSC) (now the California State University system) campuses served as the baseline for classroom utilization.

Continued Change in Utilization Standards

The comprehensive *Restudy* was confirmed a decade later in 1966 by the California Coordinating Council for Higher Education (CCHE), which established space standard metrics including use and utilization criteria for California higher education.[7]

As noted by the California Legislative Analyst's Office, classroom and class laboratory utilization standards historically have been developed based on:[8]

- Hours per week of room availability.
- Percentage of time a room is in use when it is available.
- Percentage of stations in a room that are occupied when the room is in use.

The evolution of classroom utilization metrics in California, and mirrored across the United States, is summarized in Table 1. The metrics shift up and down every few years, with no new statewide empirical study of classroom utilization conducted since the 1953 studies at UC and CSC, nearly 65 years ago. *(See Table 1 on page 33.)*

The University of California and the California State University both follow legislative requirements enacted in 1970 and 1973 to meet California's use and utilization requirements. These produce a single metric based on classrooms available for use 14 hours a day, from 8:00 a.m. to 10:00 p.m., five days a week, or 70 hours per week. Class laboratories (teaching laboratories) are expected to be available from 8:00 a.m. to 5:00 p.m., five days a week, or a total of 45 hours per week.[9] This results in a classroom use of 35 weekly student contact hours per classroom station and 20 hours per week per class laboratory station.[10, 11]

MEASUREMENTS, DATA, AND FINDINGS FROM RECENT INSTRUCTIONAL USE STUDIES

While conducting classroom utilization studies and measuring the percentage of utilization of rooms across an entire campus provides an overall gauge of how well rooms are being used and utilized, these aggregate utilization measures do not reveal the reasons for the results.

Our firm's classroom utilization studies over the past decade have allowed us to isolate and analyze a variety of measurements to help campuses understand the reasons for their use and utilization rates. These analyses show at least four factors that influence classroom utilization rates:

1. Course Scheduling Decisions

- **Courses vary in length and frequency.** The traditional Carnegie concept of the credit hour that led to courses taught three days a week for one hour each is no longer the primary mode of instruction delivery at many campuses.

  As shown in Table 2, which presents results from four recent classroom utilization studies, the three-day-a-week course (Monday-Wednesday-Friday or another three-day combination) occurs, on average, only 23 to 40 percent of the time at these campuses, with some campuses reporting as low as 7 or 8 percent. *(See Table 2 on page 35.)*

- **Courses are taught with variable start and end times.** Campuses frequently do not use the one-hour course or a similar variant as the standard they follow. For example, for pedagogical purposes, at the Seaver College of Pepperdine University, many courses are one-and-one-half or two hours long, while other courses are held for one hour.

  Scheduling courses to fit and stay within scheduled start and end time course schedule blocks is essential if campuses want effective utilization. Allowing a course to start on a regular time block, but extend past the standard ending time, can create a situation where the hour that follows cannot be scheduled, resulting in lower use and utilization.

2. Room Scheduling Decisions

- **Courses are frequently taught only one or two days a week.** In a small sample of campuses, the most frequent instructional practice consisted of courses that are taught one or two days per week, which occurs for 60 to 90 percent of courses. These can be any single day or any two days, with Tuesday-Thursday dominating. When courses are taught on one or two days per week, classroom utilization can be high, but only if courses are paired to cover all or most days of the week. In well-planned course pairing, two courses share a five-day week: either a three-day-per-week course paired with a two-day-per-week course, or two two-day-per-week courses paired with one one-day-per-week course.

- **Some courses require longer instructional time.** To overcome the negative utilization impact of courses that require longer class hours and leave open unused blocks of

Table 1: Evolution of Current Utilization Metrics for Higher Education Instructional Space in California

Category	Total Room Availability – (Hours per Week)	*Rooms Assigned* (Hours per Week)	*Rooms Assigned* Percentage of Available Rooms in Use	Stations Occupied When Rooms in Use (Percent)	Stations Occupied When Rooms in Use (Percent)
1948—Strayer					
Classrooms	45	29	65%	no standard	—
Teaching Laboratories	45	29	65%	no standard	—
1955—Restudy					
Classrooms	45	36	80%	67%	24.0
Teaching Laboratories	45	24	53%	80%	19.2
1960—Master Plan					
Classrooms	45	30	67%	60%	18.0
Teaching Laboratories	45	20	44%	80%	16.0
1966—CCHE[a]					
Classrooms	45	34	75%	66%	22.4
Teaching Laboratories					
Lower Division	45	25	56%	85%	21.3
Upper Division	45	20	44%	80%	16.0
1970—ACR 151[b]					
Classrooms	70	52.5	75%	67%	35.0
1973—Budget Act[b]					
Teaching Laboratories					
Lower Division	45	27.5	61%	85%	23.4
Upper Division	45	22	49%	80%	17.6
1980—Community Colleges[b]					
Classrooms (large campus)	70	53	76%	66%	35.0
Classrooms (small campus)	70	48	69%	66%	31.7
Teaching Laboratories	70	27.5	39%	85%	23.4
1990—CPEC[c]					
Classrooms	70	varied	—	varied	30.0
Teaching Laboratories	45	varied	—	varied	varied

a: Coordinating Council for Higher Education.
b: Assembly Concurrent Resolution. Source for standards currently in use.
c: California Postsecondary Education Commission.

Source: *http://www.lao.ca.gov/2003/flexible_facility/flexible_facility.html*

Table 2: Standard Course Meetings, Classroom Days per Week

	Campus A	Campus B	Campus C	Campus D	Campus E
		Central Classrooms	*Department Classrooms*		
Days per Week of Scheduled Courses	**Very Large Public**	**Very Large Public**	**Very Large Public**	**Mid-Size Public**	**Small Private**
One Day per Week	21.6%	51.4%	60.4%	15.0%	19.5%
Two Days per Week	54.8	36.6	30.0	44.1	64.1
Three Days per Week	23.4	7.7	7.1	40.4	6.5
Four Days per Week	0.2	2.7	1.9	0.5	9.9
Five Days per Week	0.0	1.6	0.6	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Ira Fink and Associates, Inc.

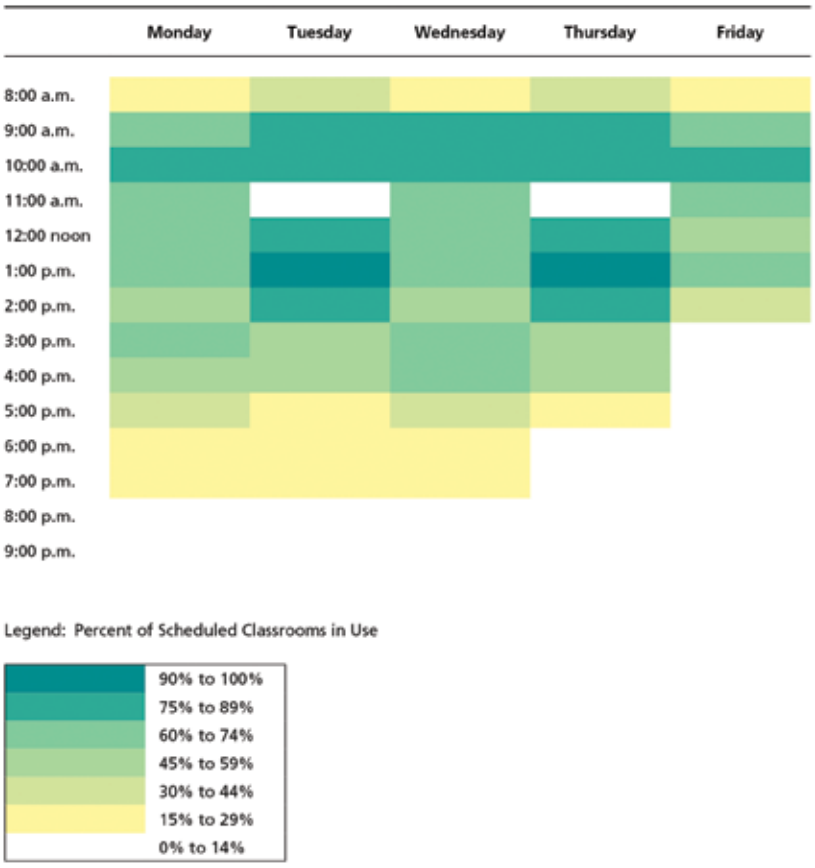
classroom time, some campuses move these longer courses to midafternoon, where extending the time block does not have a significant detrimental effect on scheduling. For example, at the University of Iowa, classes that meet for two consecutive hours or three consecutive hours on the same day are not scheduled on weekdays earlier than 2:30 p.m. in general assignment classrooms.[12]

- **Longer transfer time is required between classes.** On some campuses, the instructional period is not typically a 50-minute instruction period with a 10-minute transfer time between classes, with a total course hour of 60 minutes. There can be several different variants. For example, at very large campuses, such as Ohio State University, the typical instruction time is 48 minutes with a 12-minute transfer time, which maintains the number of 60-minute time blocks per day. As an alternative, at Virginia Tech, the University of Connecticut, and Clemson University, the typical instructional block is 50 minutes with a 15-minute break, which results in a total 65-minute time block. These 65-minute block schedules result in the need to eliminate one full instructional period when the longer 15-minute transfer periods and total 65-minute time blocks are amassed over an entire day. This also can affect utilization rates.

- **Classrooms are entirely blocked from use during certain instructional hours.** Campuses sometimes choose to block rooms from instructional use entirely during high-demand times in the academic week. Shown in Table 3 is an example of room use at one campus, where on Tuesday and Thursday from 11:00 a.m. to 12:00 noon there are no scheduled courses. This is not an error; it is intentionally done to block time for faculty meetings and related activities. Yet, it can create difficulty for schedulers who are trying to arrange a reasonable course schedule in the middle of the day.

  While having this time set aside in blocks for faculty to convene weekly may be necessary, it would be better to move these "no-course time blocks" to midafternoon where they would function equally well for their intended faculty purpose and not significantly impact the regular scheduling calendar.

Table 3: Percentage of Rooms in Use in Scheduled Classrooms by Hour of the Day and Day of the Week, Fall 2012



Source: Ira Fink and Associates, Inc.

3. Course Management Decisions

- **Scheduled courses are canceled without a plan for filling empty classrooms.** At two campuses we studied, a high percentage of courses were scheduled and then canceled during the first two weeks of instruction because of low or no enrollment. At one campus, 8 percent, or 1 in 16 scheduled courses, were canceled. At another campus, 12 percent, or 1 in 8 courses, were canceled.

  Because these classes had been scheduled and rooms assigned, it was difficult to find a last-minute substitute course to use for the suddenly empty classrooms. This problem contributes to lower aggregate room utilization. One remedy is to leave some courses without room assignments prior to the start of the academic term following review of the historical record to identify types of courses that are likely to be canceled. For these potentially high-cancellation courses, their room assignments would be TBD (to be determined).

- **Departmentally scheduled courses.** In general, class laboratories are assigned to departments because these rooms contain course specific furniture and equipment and they are also a source of departmental pride. It is a generally accepted practice that departments schedule the use of their assigned class laboratories and coordinate their use with the registrar.

  By comparison, departmentally scheduled classrooms are another matter. Because these departmentally scheduled classrooms are also likely to be in close proximity to other department facilities, scheduling and using these classrooms benefits the department. At the same time, these rooms are probably no different than other registrar-controlled classrooms scheduled on a campus-wide basis. Because of their lower use, at a minimum, departmentally held classrooms should be centrally scheduled during peak time and then revert to departmental control at other times.

3. Classroom Management Decisions

At many campuses, the registrar is responsible for assigning courses to classrooms. At the same time, there may be no unit or division with responsibility for classroom management, including classroom modernization, classroom fittings, classroom comfort, and classroom maintenance. Because general-assignment classrooms usually have no "owner," their important functional needs often have no champion within the campus governance structure. This can mean general-assignment classrooms limp along from year to year or even from student generation to generation without attention to their condition or needs.

- **Comfort:** Providing a comfortable teaching environment extends beyond the furniture. Environment includes the temperature of a room (either hot or cold), the lighting, the wall surfaces, etc. Since the users of a room are generally unable to modify its environmental conditions, instructional spaces should be constructed with individual environmental controls, rather than using grouped or otherwise common zoned environmental conditions in a series of rooms. Campuses should establish a classroom improvement committee to identify needs, set priorities, and seek funding for these energy-conserving measures.

- **Technology:** In just a few years, technology, in all of its forms, has become one of the most important factors in changing higher education instruction. While it is assumed that campuses have a technology plan for instructional space, not all do. At a minimum, each campus should identify the base level of technology in all rooms and the extended level

of technology in a number of rooms. The technology needs should be listed in an instructional-space upgrade plan and then addressed.

IDEAS FOR IMPROVING USE AND UTILIZATION

There are a number of actions a campus can take to improve classroom and class laboratory utilization. Many of these require management or administrative actions related to course and room scheduling and management. They include:

1. **Put someone in charge of classrooms.** Appoint a director, create an office, or restructure decentralized scheduling activities so an identified classroom resources activity and its director are known and responsible.
2. **Analyze classrooms beyond their use and utilization.** Conduct a physical-condition and deferred-maintenance audit of the classroom space. Identify technology standards for classrooms. Measure how well classrooms match up to campus technology requirements.
3. **Create a website identifying and illustrating every classroom.** Providing photos and details of the characteristics of the campus classrooms on a website will allow faculty to have an opportunity to identify the type of room that would best suit their instructional needs.
4. **Work with faculty to understand how instruction is changing and what is required.** Pedagogical change and active learning may require changing furniture from tablet arms to tables, shifting how surfaces are arranged around the room, or simply giving faculty a podium from which to use their laptop for instruction.
5. **Revisit the assignment of departmentally controlled classrooms.** It may be best for a campus to recentralize control of departmentally controlled classrooms throughout the day or, at a minimum, during an extended lunch hour peak time from 11:00 a.m. to 1:00 or 2:00 p.m., when the classrooms revert from departmental assignment to campus assignment. Typically, departmentally scheduled classrooms have lower use and utilization than do centrally scheduled classrooms.
6. **Establish scheduling time blocks that reflect how campus courses are actually taught and classrooms are utilized.** Some campuses may need to revisit their existing scheduling blocks that are based on a template of the standard three-day-per-week, one-hour time blocks and two-day-per-week, one-and-one-half-hour time blocks, and replace that established template with a new one.

CONCLUSION

Classroom utilization metrics and results should become a foundation for campuses that are concerned about the effective use of their classroom spaces. The focus of utilization studies should be more than simply identifying how well the rooms are measuring up compared to a campus goal or requirement. Utilization studies should also provide a vehicle for finding out about the usefulness of the classroom inventory.

Left to themselves, classrooms have no voice, no spokesperson, and no advocates for improvement or increased use. Regardless of how well they are used, classrooms are and will continue to be central to delivering instruction in higher education; they will also age. If there is a mismatch on the campus between campus classroom supply and demand, as is shown in the utilization studies, this can be corrected. If the classrooms are aged and antiquated, this should be a wake-up call that the campus needs to do more and do better with this important resource.

ENDNOTES

1 Ira Fink, "Classroom Use and Utilization" *Facilities Manager,* Vol. 18, No. 3 (May/June 2002), pp. 13-24; Ira Fink, "Class Laboratories: Space Use and Utilization," *Facilities Manager,* Vol. 19, No. 6 (November/December 2003), pp. 17-27.

2 Elena Silva, Taylor White, and Thomas Toch, *The Carnegie Unit: A Century-Old Standard in a Changing Education Landscape* (Stanford, CA: Carnegie Foundation for the Advancement of Teaching, January 2015). https://www.carnegiefoundation.org/wp-content/uploads/2015/01/Carnegie_Unit_ Report.pdf. (accessed October 30, 2016)

3 *Report of the Committee Appointed by Dr. William L. Ettinger, Superintendent of Schools, to Make a Survey of the Junior High Schools of the City of New York* (New York: New York Superintendent of Schools, 1924).

4 Paul C. Packer, Ph.D., *Housing of High School Programs* (New York: Teachers College, Columbia University, 1924).

5 Monroe E. Deutsch, Aubrey A. Douglass, and George D. Strayer, *A Report of a Survey of the Needs of California in Higher Education* (Berkeley: University of California Press, 1948), p. 128.

George Strayer, the principal author of that study, was also a participant in the earlier 1920 studies in New York City. Thus, the spatial concepts and metrics developed in the mid-1920s in junior and senior high schools in New York City may have been the genesis of space use and utilization criteria that were established in California higher education and eventually nationwide.

6 Thomas R. McConnell, *A Restudy of the Needs of California in Higher Education* (Sacramento: California State Department of Education, 1955).

The *Restudy* report standard was based on a room availability of 45 hours per week and a usage of 36 hours, or 80 percent of the time. Of the seats in a room, 67 percent were to be occupied.

7 Franklin G. Matsler, *Space and Utilization Standards, California Public Higher Education: A Report to the Coordinating Council for Higher*

Education (Sacramento: Coordinating Council for Higher Education (CCHE), September 1966).

The CCHE standard was based on a 45-hour week for room availability and a usage of 34 hours per week, or 75 percent of the time. Seat or station occupancy was set at 66 percent.

8 Legislative Analyst's Office, "Higher Education: Flexible Facility Utilization Standards" (Sacramento: Legislative Analysis Office, 2003). http://www.lao.ca.gov/2003/flexible_facility/flexible_ facility.html.

9 Based on these metrics, the State of California expects the public higher education systems to schedule courses and put rooms to use an average of 52.5 hours per week, per classroom, as shown in Table 1. During these scheduled hours, it is expected that two-thirds (66.7 percent) of the stations in the rooms will be occupied. The result is occupancy metric of 35 weekly student contact hours per station (52.5 hours × 66.7 percent = 35 hours) for classrooms.

For class laboratories, the calculations follow a similar set of metrics based on averaging the two class laboratory standards shown in Table 1, one of 23.4 hours of station occupancy for lower division courses and the second of 17.6 hours of class laboratory use per week for upper division resulting in 20 hours per week expected utilization of class (teaching) laboratories.

10 *Classroom and Teaching Lab Utilization Report* (Sacramento: University of California Capital Programs, October 2015). http://www.ucop.edu/operating-budget/_files/legreports/15-16/UCClassroomTeachingLabUtilizationRptwithAppendicesFall2014.pdf.

These utilization metrics are among the highest in the nation. Biennial reports from UC and the CSU, in the most recent analysis, show most of the UC general campuses all exceed the metrics and range in utilization of both classrooms and teaching laboratories.

11 *Fall 2013 Classroom and Teaching Laboratory Utilization Report, California State University* (Long Beach, CA: The California State University, Office of the Chancellor, September 2014). https://www.calstate.edu/budget/fybudget/legislative-reports/1415-LAO-Utilization-Facilities-Student-Space-Report.pdf.

12 University of Iowa, *Scheduling Regulations & Departmental Allocations.* http://www.classrooms.uiowa.edu/LinkClick.aspx?fileticket=YAhZiUxUtCI%3d&tabid=113.

Ira Fink is president of Ira Fink and Associates, Berkeley, CA. He can be reached at *ira@irafink.com*.

CELEBRATING 50 YEARS

GALE

ENGINEERS & DESIGN PROFESSIONALS

Specializing in Educational Facilities since 1964

Gale Associates, Inc.
800-659-4753
jfl@gainc.com
www.galeassociates.com

Building Enclosure/Structural Services:

- Roof and building enclosure management programs
- Roof, wall, window/glazing, waterproofing, and structural evaluations and designs
- Forensic evaluations
- Construction phase assistance
- Enclosure design assistance and peer review for new construction, and historic, LEED-certified, and green roof facilities

Athletic and Recreation Facilities Design Services:

- Comprehensive athletic campus evaluation and master planning
- Athletic facilities planning, permitting, and programming
- High-efficiency lighting, minimizing off-site impacts
- New track facilities, track renovations, and conversions
- All types of synthetic and natural turf fields

BOSTON BALTIMORE ORLANDO BEDFORD, NH WASHINGTON, DC HARTFORD

How to Structure an EFFECTIVE SPACE COMMITTEE

BY ANN FORMAN

Space committees can be an important decision-making body on university campuses, helping to generate consensus among senior leaders and shape space management policies. However, they often fail to drive better space decision making, typically because institutions struggle to pinpoint the right membership and ensure that the right conversations take place.

Space committees are most likely to stall when the institution fails to properly scope the issues in the committee's purview. While many institutions are most concerned with selecting the right membership for their space committee, assembling the right group is important but not sufficient to guarantee a committee's success. Institutions must also ensure that the requests the committee reviews are relevant to members.

Institutions can keep space committees on track by creating a tiered review process to vet requests and send the most important ones to a senior space committee for review. Our research has revealed three successful space committee models.

OPTION 1: THE GATEKEEPER MODEL

The first option for creating a tiered space-request resolution process is to appoint a single person, or gatekeeper, to review all space requests before they go to the space committee. The gatekeeper vets each request, approving small projects and sending certain requests to the space committee for further review. Pennsylvania State University and Brown University both utilize the gatekeeper model, each using a different person to fill the role.

Two Facilities Committee Models

At Penn State, the facilities director serves as the gatekeeper, vetting the viability and cost of every space request. Brown uses an associate provost to screen space requests against academic priorities. In both models, the space committee only receives requests that pass the gatekeeper's screening process. This protects the committee's time and ensures that senior-level members focus on the most important space decisions.

OPTION 2: BICAMERAL SPACE COMMITTEE

The second option for establishing a tiered space-request resolution process is to establish a bicameral space committee. In this model, a junior space committee reviews all space requests, approving routine requests and small projects, and only sends the most important decisions to the senior committee.

At Boston University, the more junior sub-SPACE (Space Planning and Capital Expenditures) committee is an eight-person group composed of a mix of facilities employees and assistant vice presidents. It meets biweekly, independently considering and deciding on projects under $1 million. For more expensive or complex projects,

requests are augmented with cost estimates and alternative solutions before being sent to the senior SPACE committee, composed of the president and five vice and senior vice presidents, for review.

Because of the junior committee's scoping work, the senior SPACE committee is able to meet less frequently and resolve issues faster. While the bicameral model requires more people than the gatekeeper option, the junior committee is able to assume more administrative responsibilities from the senior committee, further protecting the time of senior leaders.

OPTION 3: EMAIL-ONLY RENOVATION COMMITTEE

The final option for establishing a tiered space-request resolution process is establishing an email-only committee. In this model, committee members review, discuss, and vote on requests via email, decreasing the time commitment by building-in flexibility. For example, Florida International University (FIU) uses an email-only space committee to review all incoming space requests, ranging from temporary art installations to major space renovations. Once the office of space management reviews a request to ensure it is appropriately scoped and makes a recommendation, it is sent via email to the entire committee. All members review it by an agreed-upon deadline or appoint a proxy to review it in their absence. Final votes are submitted via email, and the project is either approved or denied.

Beyond the efficiency of the email-only committee, FIU has found that requiring faculty, departments, and colleges to seek approval for all changes made to any campus space has led to a decreased sense of ownership over space. Instead, faculty and staff are beginning to view it more as a central resource that belongs to the university itself.

Importantly, FIU's email-only committee was the natural evolution of a highly successful, well-established in-person committee. Institutions should only consider pursuing this third option after they have had a trusted space-request evaluation process in place for a year or more.

By clearly laying out the path of a space request from the initial request to approval, UMBC ensures that everyone on campus understands how space decisions are made.

SOLIDIFYING THE SPACE REQUEST PROCESS

No matter which committee structure you use, clarifying the decision-making process is crucial for success. When people don't understand how the process works, they are more likely to use informal channels and circumvent the space committee. Institutions like the University of Maryland Baltimore County (UMBC) have published formal flowcharts outlining their space-request decision-making process. By clearly laying out the path of a space request from the initial request to approval, UMBC ensures that everyone on campus understands how space decisions are made.

While Facilities leaders should steer their campus toward a committee structure that meets the unique needs, personalities, and culture of their institution, these models shed light to how to overcome three common missteps. First, avoid overburdening the committee with every single space request by filtering them before they are formally considered. Second, only ask senior leaders to weigh in on requests that truly require their input. And finally, aim for a deliberation process that is as efficient as possible. Adopting one of the models outlined here—and avoiding the concomitant governance misstep—can help rebuild and reenergize the space governance process.

Ann Forman is senior consultant for EAB Strategic Research, Washington, DC. She can be reached at *aforman@eab.com*. This is her first article for *Facilities Manager*.

WE'LL GROW YOUR TREES WHILE YOU GROW YOUR BUSINESS.

We're Bartlett Tree Experts, a 100+ year old tree and shrub care company with global reach and local roots. We provide expert, attentive service, a safety-first record, and a wide spectrum of services, including:

- Tree & Shrub Pruning
- Cabling & Bracing
- Fertilization & Soil Care
- Insect & Disease Management
- Inventory & Management Plans

BARTLETT TREE EXPERTS
SCIENTIFIC TREE CARE SINCE 1907
FOR THE LIFE OF YOUR TREES.

Call 877.BARTLETT (877.227.8538) or visit BARTLETT.COM

APPA 1000—Total Cost of Ownership (TCO) Work Group Report

By Dana "Deke" Smith, FAIA

In asset management, good stewardship of your organization's resources begins with revealing the true total cost of ownership (TCO) from construction to demolition of the asset. Too often, decisions made with only first-cost information unknowingly commit your organization to a lifetime of extraordinarily high costs for maintenance and operations.

Deke Smith

Ana Thiemer

APPA recognizes the severe consequences of this kind of decision on facilities professionals, and has undertaken a leadership activity to develop an ANSI (American National Standards Institute) standard for all member organizations and beyond to use in implementing a TCO strategy. The effort began in early 2016 and was initiated under the leadership of Doug Christensen, Ana Thiemer, and Deke Smith. With Doug's passing in August 2016, Ana and Deke are committed to carrying his vision and plan forward.

Twenty-four professionals from across the United States and Canada are working to develop the ANSI standard. Three phases of the standard will be established: 1) Overview and Principles, 2) Concepts, and 3) Implementation Plan. Currently, the team is creating the first phase—the development of "13 Principles for TCO." At the APPA Annual Conference held in Nashville, Tennessee in July 2016, the working group participated in a panel discussion to make a preliminary progress report on the effort; this can be found at *http://www.appa.org/standards_tco.cfm*.

The team is linking the effort to the International Organization for Standardization (ISO) service life planning standard (ISO 15686) and open building information modeling (BIM) standards (to include ISO 16739 and others), in order to build on a strong foundation.

As stated above, the TCO standard is intended to be based upon ISO 15686, *Service Life Planning*, a product of Technical Committee TC59/SC14. This will then become the guidance for the implementation of ISO 15686 in the United States. The additional power of this ANSI standard will be to tie in ISO 55000:2014, *Asset Management—Overview, Principles and Terminology,* and ISO 41000:2015, *Facility Management,* as normative standards. ISO 15686-4:2014's connection with BIM will then link all the above standards as well as ISO 16739:2013, *Industry Foundation Classes for Data Sharing in the Construction and Facility Management Industries,* and ISO 12006-3:2007, the basis for the buildingSMART International Data Dictionary.

Writing a standard is typically only step one of the process. Getting a broad base of users to adopt the

standard is ultimately a far more important step; it is only then that software vendors will invest in writing software supporting the standard, because they will then have a chance of getting a return on their investment based on the number of potential buyers. Of course, this investment will then in turn increase the user base.

Through this effort, the standard will serve as a rallying point for all organizations to agree upon a way forward, so that the approach becomes an attractive investment opportunity for software companies to develop tools to support the approach. TCO takes all costs (procurement, installation, operations, maintenance, recapitalization and disposal) into account in the decision process and then establishes an expenditure plan for the life of the asset. This long-term view will help with understanding budget needs necessary to sustain an asset for its entire life from day one. Accomplishing similar plans for an asset manager's entire portfolio will greatly aid in optimal budget allocations for the entire organization.

The committee will be dedicating the APPA 1000 standard to the memory of Doug Christensen. He was actively involved in professional associations and recognized worldwide as an industry innovator and leader in the total analysis and management of physical facilities.

Look for the release of the ANSI TCO standard in mid-2017. We encourage anyone interested in reviewing the drafts of the document (as they become available) to contact the chairs, Deke Smith (*deke@dksic.net*) or Ana Thiemer (*ana.thiemer@austin.utexas.edu*).

Deke Smith is president of DKS Information Consulting, LLC, Herndon, VA, and serves as a cochair of the APPA Total Cost of Ownership Work Group. He can be reached at *deke@dksic.net.*

The #1 Recommended Self-Watering Planter
You'll Reduce Labor, Fuel and Water Consumption 50-80%, Guaranteed!

"…they've cut down on our labor significantly"
– Auburn University, Alabama

"The plants have done fantastic!"
– Bentley University, Massachusetts

"The flower growth is excellent and the root structure is amazing"
– Syracuse University, New York

"…it's the best thing we've done in a long time"
– Xavier University, Ohio

EarthPlanter
The Leader in Commercial Self-Watering Planter Systems

Toll Free: 1.877.815.9276
EarthPlanter.com | sales@earthplanter.com

If You're Looking to Get Hired, *Job Express* Can Help

Campus Facilities Jobs Are Out There!

JOB express

Facilities management is a complex field, and educational facilities have special concerns that set them apart from commercial properties. At APPA's Job Express, you will find professional facilities management positions currently available at colleges and universities, K-12 organizations, hospitals, public works, museums, and other agencies and organizations.

Whether you are looking for a part- or full-time job, an internship, or working on your resume, Job Express will help you find what you need.

For more information go to **www.appa.org/JobExpress/index.cfm** or contact Steve Glazner at steve@appa.org.

APPA
LEADERSHIP IN EDUCATIONAL FACILITIES

1643 Prince Street
Alexandria, VA 22314
703-684-1446

www.appa.org

The Surprising Emergence of 10-Year Buildings for Long-Term Campus Planning

By Rusty Williams

Conventional wisdom says that there are two kinds of buildings: permanent and temporary. Most construction is considered permanent – designed to last 100 years or more. Temporary structures have typically served a more tactical purpose such as "swingspace" used during construction or in the event of a flood, fire, or other unforeseen circumstance. But, increasingly, schools are seeking facilities that combine the aesthetic characteristics of permanent buildings with the option to expand, contract or remove the building entirely within a relatively short timeframe.

At first this may seem odd. Why invest in a building that is designed to be moved or removed? The answer is flexibility. It's more cost effective to plan for change in advance, than to tear down or "gut" buildings after a decade of use. In many ways, this new approach is a response to the rapid changes in technology – the skills, staffing, and facilities required ten years from now are impossible to predict, but it's certain that they will be different.

Photo: Triumph Modular (used with permission.)

Harvard's Pagliuca Life Lab.

The up-front planning required to enable Lego-like assembly of multiple modules manufactured offsite also provides the flexibility to more easily expand or remove the building after several years. With significant advances in the quality and design of modular construction, an increasing number of top-tier institutions and universities are embracing modular.

CHOOSING MODULAR CONSTRUCTION

For example, Harvard University recently opened a new "Life Lab" in the innovation district of their Allston campus. The existing i-Lab has been used for five years as an incubator for dozens of start-ups and entrepreneurs. Harvard wanted to offer a similar facility with state-of-the-art wet lab space nearby to support research and development of new biotech, pharma and other life-science technologies. Flexibility, along with speed-to-occupancy, were the primary reasons that Harvard chose modular construction.

Harvard engaged several special-use building consultants to assist with the design, scope of work development, and fabrication of a 15,000 square foot wet lab facility including complex lab-specific MEP systems, ductwork and equipment. Through modular

construction, time to occupancy was accelerated by approximately 12 months, allowing the building to be ready for occupancy after just seven months of construction. Within a few weeks of opening, the new Life Lab was home to more than 20 start-ups.

Although the building was assembled from 32 modules and transported from Pennsylvania, the building bears no resemblance to a trailer or a temporary structure. It features a glass atrium stairway, multiple conference rooms, a kitchenette, and high-end refrigeration and ventilations systems required to support the highly-specialized research.

THE NEW NORM: AN ADAPTABLE, CONFIGURABLE CAMPUS

As surprising as that may sound, planning for reconfiguration or relocation after a relatively short period may become the norm for new buildings. Facilities need to support rapidly changing technology and encourage cross-department collaboration so it's almost certain that modifications will be necessary within a decade.

Google presents a similar vision for the future of buildings in their planning for a new campus in Mountain View California. In the company's overview video, David Radcliff, Google's Director of Real Estate perfectly summarizes the challenge facilities planners face when noting Google's approach to design a development - "How will we work 15 or 20 years from now? We don't know exactly what it's going to be, but we know that it needs to be incredibly flexible space."

The emergence of a 10-year building doesn't mean that schools and companies won't continue to build 100+ year buildings, but it's certain that they will be supplemented with facilities designed to expand and contract around these central buildings in response to changing needs. This concept of adaptable, configurable campus is a natural response to the rapidly changing world that we live in.

Rusty Williams manages the development of special-use and educational buildings for Triumph Modular, a specialty building contractor creating high-quality customizable modular buildings for world-class universities in Littleton, MA. He can be reached at *rwilliams@triumphmodular.com*.

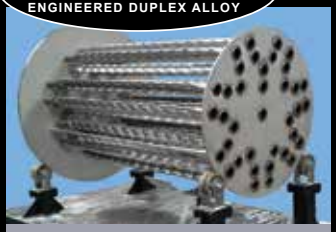
Hot water
for less money
for a very, very long time.

Science nerds might even call it "the perfect fusion of heat transfer and corrosion engineering."

15-YEAR
TANK and HEAT EXCHANGER
CORROSION WARRANTY

POWER VTX®
CONDENSING WATER HEATER

AquaPLEX®
ENGINEERED DUPLEX ALLOY



Tank and heat exchanger are fabricated entirely of AquaPLEX duplex stainless steel. Fully pickle-passivated, it requires no linings or anodes of any type.

- **95.5% to 95.8% thermal efficiency**
- **Full burner modulation** enables precise temperature control under varying flow conditions and improves efficiency to 99%
- 500,000 • 750,000 and 1,000,000 Btuh models
- Moderately sized tank provides hot water during low demand with minimal burner cycling. **Extremely low standby losses**
- Electronic, touch-screen operating control with Modbus. Includes plain-text status, diagnostics, firing rate indication and history. Protocol gateways available

www.pvi.com

PVI®
Engineered Water Heating Solutions®

APPA DRIVE-IN WORKSHOPS

APPA's Facilities Drive-In Workshop offerings are an excellent way for APPA member institutions to encourage networking and professional development among educational facilities professionals within their local vicinity. These workshops are ideal for professionals who might not normally have access to training and professional development opportunities, due to operating budget restrictions or similar constraints and are a great way to introduce these professionals to APPA, its regions, and chapters.

How are APPA's Drive In Workshops Planned and Organized?

Each workshop is organized with the support of APPA, an APPA Business Partner, and a host educational institution.

Responsibilities of the Host Institution:

- Provide adequate meeting space plus tables and chairs (conference room plus adjoining registration area, as well as separate seating in adjoining area for sponsored luncheon).
- Supply audiovisual equipment (typical requirements are a podium, one or two mics, a projection screen and LCD projector).
- Arrange for parking if needed for attendees.
- Provide menu options to the sponsor (if the host location site has a kitchen or works with required caterers). The sponsor picks up the cost of lunch and all breaks.
- The person coordinating on behalf of the host institution (typically the institution's facilities officer) is present during the workshop to welcome attendees and provide some introductory comments on APPA.

Responsibilities of the Sponsor:

- Works with APPA and the host institution to identify suitable session content and speakers, and firms up the program. This also ensures that the content is fully educational in nature, i.e., does not advocate a particular product or service.
- Manages on-site registration on the day of the workshop, distributes badges and distributes/collects evaluation forms.
- Pays sponsorship fees, cost of food/beverage at the workshop.

Responsibilities of APPA:

- Manages event promotions (produces flyer, email invitations and distributes these promotions).
- Creates list of prospective attendees (from both APPA member institutions and prospective institutions). Shares this targeted attendee list with the host and the sponsor.
- Creates an online registration link and sends regular attendee registration reports out to the sponsor and host prior to the event.
- Works with host institution's facility officer to prepare any comments, supporting materials, slides describing APPA, benefits of becoming involved with APPA, etc.

For more details about sponsoring or hosting an APPA Drive-In Workshop, please contact APPA's Professional Development Manager, Corey Newman at corey@appa.org.

1643 Prince Street, Alexandria, VA 22314

APPA LEADERSHIP IN EDUCATIONAL FACILITIES

CIL: Customized Interactive Learning—APPA's Latest and Greatest Educational Opportunity

By Ruthann Manlet

Customized Interactive Learning (CIL) is a relatively new way to learn the basics of APPA's Four Core Modules as you work your way toward earning your CEFP and EFP (Certified Education Facilities Professional and Educational Facilities Professional) designations. The way we learn—as well as the entire educational system—is undergoing incredible transformation. In the past, the primary way to earn a degree was to enroll in a course, buy the books, go to class, do your homework, take written exams, wait for the results, and if all went well, you passed the class and ultimately earned a degree.

"The real-life answers provided by fellow students bring a perspective to the issue that an instructor or a textbook cannot."

With interactive learning, all that has changed—and the facilities industry is trying to keep up with that change. CIL is one of the latest, innovative ways that APPA has developed to allow our members an effective and efficient way to stay current with the constant shifts in our industry. CIL is available to all APPA members who are pursuing their CEFP/EFP designations.

THE LEARNING ADVANTAGE

There are several reasons why all APPA members should take advantage of this program. First, the online feature is appealing to many professionals who have hectic schedules and busy lives; online learning allows these students flexibility.

Second, based on the feedback from members who have taken advantage of this program, the ability to collaborate with other students in the "forum" is a great benefit. The forum is an online chat room where a student can pose a question and other students who may have specific knowledge about the topic can respond. Upon your enrollment in the class, you are assigned to a cohort group; and along with your fellow students you work through the exercises and assignments together.

Throughout the course you have the opportunity to participate in four live webinars, during which you discuss the material and prepare for the exam. The webinars expand growth opportunities for the group, to ensure that it is fully prepared. These webinars are recorded for future reference—this unique feature has proven to be an extremely valuable tool that allows the students' varied and significant experiences to be shared with one another. The real-life answers provided by fellow students bring a perspective to the issue that an instructor or a textbook cannot.

Along with the forum, students are encouraged to use the flashcards, which are also a helpful tool. The flashcards offer specific answers on a topic that may help to identify a correct answer on the exam, or eliminate a wrong answer. Taken together, the forum, the flashcards, and the BOK (Body of Knowledge) offer an easily accessible, diverse, and very thorough coverage of the topic being studied.

After completing the modules, the students will not only earn the appropriate designation, but will bring significant benefits to their respective institutions, enhance their knowledge, and advance their careers. Furthermore, the contacts they make and the relationships they develop while earning their designations will be a valuable asset throughout their careers.

Over the years I have taught many courses in many different settings. I had the privilege of be-

ing the facilitator for Group A, the first class of students who used the CIL format; it is obvious to me that letting the students work at their own pace and giving them the ability to interact with their peers results in an immediate improvement in test scores.

MAKING CONTACTS AND CONNECTIONS

The more involved one gets in the facilities industry, the more it becomes apparent that our goals can be attained more quickly by working in a spirit of cooperation. I am certain that the collaboration and contacts that are developed through APPA and the CIL will prove invaluable to our careers and to our respective institutions. I am excited and encouraged by the feedback I have received from those who are taking part in this new era of learning.

To date, more than 300 students have participated in the CIL program. There are financial incentives available from all APPA regions that make CIL more affordable than ever. Be sure to check out this unique and exciting opportunity.

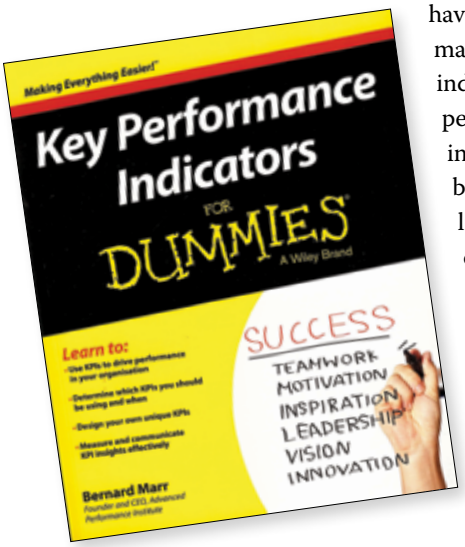
Ruthann Manlet is facilities team leader at University of Minnesota–Twin Cities, and is APPA's Vice President for Professional Development. She can be reached at *manle001@umn.edu.*

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

What a year—thank goodness 2016 is over. In order to help you leave 2016 behind, I offer two books that focus on ways to improve, one quantitative and the other more qualitative. Have a great new year!

KEY PERFORMANCE INDICATORS FOR DUMMIES

Bernard Marr, John Wiley & Sons, Chichester, West Sussex, UK, 2015, 280 pp., softcover, $24.99.



There is a popular quote about measurement, attributed to Peter Drucker: "What gets measured gets improved." But there's also a concern about measuring too much. I've discussed the issue with knowledgeable colleagues who have seen organizations with as many as 30,000 "key performance indicators"—really, 30,000! Most people are limited to remembering seven numbers in a row; we've been forced to move beyond that limit with phone numbers and other identification numbers. Thank goodness for smartphone features.

I'm not sure how many key indicators others can remember or use, but I'd be hard pressed to get much beyond seven myself; I prefer between three and five.

Sure, a large organization will need several sets of key performance indicators (KPIs), but most operating groups can't make intelligent decisions or changes with too much information. Eventually, they'll eliminate data in order to see the "forest for the trees." But how can leaders in an organization make the decision of which information to keep and which to ignore?

I found *Key Performance Indicators for Dummies* through a reference on LinkedIn; given several other concerns at the time, I made the investment. Overall, it was a good investment; what I like about it, aside from its reasonable price and readability, are the sections that allow the reader to get concrete information about KPIs beyond financial data.

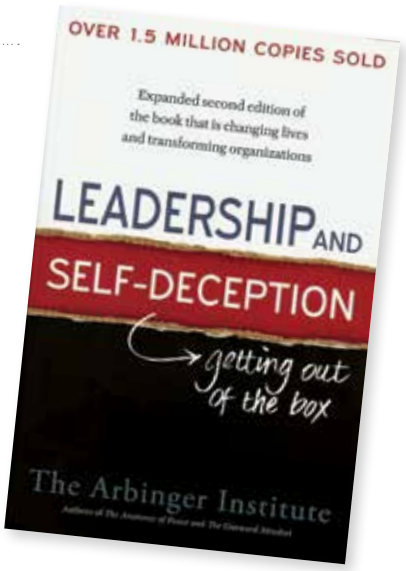
The challenge for facilities officers is their need to report financial status upstream to executives, and to maintain valuable metrics about the operations (physical, logistical, temporal, and human) that enable them make educated decisions and better manage their facilities operations. That means that facility KPIs need to be graduated such that each tier in the management structure has the information it needs to make decisions. In short, KPIs need to help answer the following questions: 1) Who is going to use the data? 2) What data will be collected and how? and 3) How will the data be maintained? If the KPIs are not developed with these questions in mind, it doesn't matter what they are.

Marr's book helps answer these questions, the most important of which is, "Who is going to use the data?" The basics of KPIs, KPI development, using the KPIs, and then communicating them are spelled out clearly in individual chapters. However, the "meat and potatoes" of identifying the KPIs is provided in individual sections focused on financial, customer, operational, and HR. It's not necessary to read the latter sections if one understands how to develop KPIs after the first several chapters, but they are there if desired.

If you're embarrassed by having a "For Dummies" book on your reference shelf, get over it or cover it up. *Key Performance Indicators for Dummies* is a valuable and helpful reference that will help you understand the value of some of the KPIs that APPA has developed through the FPI survey.

LEADERSHIP AND SELF-DECEPTION: GETTING OUT OF THE BOX

The Arbinger Institute, Berrett-Koehler Publishers, Oakland, CA, 2016, 192 pages, softcover, $16.95.



One of the many things that APPA does, primarily through the Leadership Academy, is to help facility leaders at all levels to do a better job for their organization and employees. Moving from individual effectiveness—the easy part—to organizational effectiveness, the Academy utilizes material from several sources to help people be better at leading themselves, leading others, and then leading an entire organization.

Doing better at one's job is the result of many factors, but the ability to understand one's self and to maintain good relationships with coworkers are two essential ones. Dale Carnegie wrote about developing relationships with others in his seminal work *How to Win Friends and Influence People* (1936), a book I have referenced in this column several times before when reviewing texts on management and supervision. Thousands of books have been written since then, most of which are based on Carnegie's original work. His concepts and techniques have been successful for 80 years. That doesn't mean there are no new ideas or techniques, but Carnegie did a pretty good job of laying out the basics.

Academy instructor Lindsay Wagner shared *Leadership and Self-Deception* with me while we worked on a consulting project together. It's a relatively easy read, consuming the better part of a day if done in a single sitting. It's not long or complex; at the same time, it's the kind of book that requires some reflection and revisiting if one wishes to apply the concepts presented. The presentation is conversational, similar to many other books of its kind; management books invariably require some storytelling and situational presentations. This is not a criticism—just an observation after reading dozens of these books.

The concepts presented in *Leadership and Self-Deception* address some nuances that Carnegie left out and some that are not fully covered in Covey's *Seven Habits*. The book also helps explain why people get in a "box," how to identify the box, and some ways to help them get out of it. It presents a method for achieving success that doesn't necessarily involve more people or harder work. It does require self-awareness and people skills, qualities that many people in the facilities arena find challenging. The concepts presented in *Leadership and Self-Deception* are used in the Leadership Academy, Level 2—yet another excellent example of the value of APPA's programs.

But whether you take part in the Leadership Academy or not, you should still purchase *Leadership and Self-Deception.* I'm happy to have it added to my bookshelf and plan on reading it again so I can become more effective.

Ted Weidner is an associate professor at Purdue University, West Lafayette, IN, and consults on facilities management issues primarily for educational organizations. He can be reached at *tjweidne@purdue.edu.*

APPA U

Can One Week Change the Trajectory of Your Career?

Yes it can! *Whether updating technical knowledge or building leadership skills to be a more effective manager, we all have things to learn!*

What is APPA U?

By offering both APPA's highly regarded Institute for Facilities Management and Leadership Academy, APPA U delivers quality professional training in an environment that encourages professional networking and collaboration with other education facilities professionals—in one location. This approach allows for less travel, easier registration, greater sharing of information, and an excellent opportunity for Institute and Academy attendees to network with each other throughout the week. Both the Institute and Academy are four-track programs held at APPA U twice every year.

The **Institute of Facilities Management** is the premier educational offering from APPA that exposes our community to the day to day resources and knowledge required to provide top-notch service. Each week-long session allows participants to garner the skill set needed to raise the level of their performance as well as those around them. Upon completing each session, participants will receive a certificate of completion designating the core area of study and recognition of earning 3 continuing education units (CEUs). To receive the maximum benefit, APPA recommends that students work toward graduation from the full Institute program by completing all four core areas.

The **Leadership Academy** is designed to enhance and further develop leadership throughout the educational enterprise. The Leadership Academy provides opportunities for professionals to increase their awareness of industry issues, to learn the skills necessary to handle today's changes, and to discover the leadership potential within each of us. Upon completing each session, participants will receive a certificate of completion designating the level of study and recognition of earning 3 continuing education units (CEUs). To receive the maximum benefit, APPA recommends that students work toward graduation from the full Academy program by completing all four levels of study.

"if you want to know how to be successful at a physical plant in a university environment, you should really make APPA a top priority in your training."

— Jacob Savens, Michigan State University

Register Now for the Next APPA U!

September 10-14, 2017
Providence, RI
Omni Providence Hotel

APPA
LEADERSHIP IN EDUCATIONAL FACILITIES

new products

Compiled by Gerry Van Treeck

DELTA COOLING TOWERS, INC. has just launched a line of towers constructed of antimicrobial resin, which is fully compounded into the base cooling tower material. The antimicrobial resin contains additives that operate on a cellular level to continuously disrupt and prevent uncontrolled growth of microorganisms and biofilm within the cooling tower. Efficacy tests were performed by Special Pathogens Laboratory, The Legionella Experts. Legionella, the bacteria that causes potentially fatal Legionnaire's Disease, and other strains of deadly pathogens that are hosted by some cooling towers, have been substantially reduced by the development of a unique antimicrobial high-density polyethylene (HDPE) material introduced by Delta Cooling Towers. For more information visit *www.deltacooling.com.*

ACUITY BRANDS, INC. announces the nLight AIR platform, a wireless extension of its nLight digital lighting control platform. As a fully wireless lighting control system with a five-tier security architecture, nLight AIR is ideal for seamlessly upgrading facilities to LED lighting control solutions that are designed to support compliance with state energy code requirements. nLight Air is especially suited for spaces where wiring is cost prohibitive, or for retrofits where running new wires can be difficult or complex. The nLight AIR control system consists of nLight AIR-enabled LED luminaires (equipped with eldoLED LED drivers), wireless battery-powered wall switches, and the mobile configuration app CLAIRITY for quick and easy startup. nLight AIR systems are deployed using the building's existing wiring, which reduces installation costs and accelerates payback. For more information on Acuity Brands, Inc. products visit *www.acuitybrands.com.*

OLDCASTLE ARCHITECTURAL announces the Westpeak texture as the newest addition to the Artisan Lightweight Veneer family. Westpeak is Echelon's latest offering, and along with the recently launched Kensley Stone and Hillcrest Stone Lightweight Veneers, underscores the brand's focus on continuous innovation. The new Westpeak series is available in color choices of Onyx (a dark-grey hue), Magnolia (a lighter white), or Wheat (a medium tan). All three styles are manufactured with Echelon's patented, revolutionary dry-cast system, which creates a natural stone look with integrated color throughout the entire depth of each masonry unit. For additional information on Oldcastle Architectural visit *www.echelonmasonry.com.*

SPECTRONICS CORPORATION introduces the Spectroline EagleEye UV/White Light LED Leak Detection Lamp Kit (EK-365). The EagleEye is the hands-free solution to locating leaks in cramped or hard-to-reach areas that larger lamps can't manage, because it is wearable technology made simple. This unique kit features a palm-sized, lightweight, cool-running, versatile lamp. It can be worn on a hard hat (not included) or directly on the head. It can also be handheld with the attached lanyard. It has two ultrahigh-intensity UV LEDs for fluorescent leak detection—and a flip of the switch gives you a three-LED, white-light assembly for illuminating dark work areas. With power comparable to high-intensity 100-W lamps, the EagleEye runs on a

rechargeable lithium-ion battery that provides up to 75 minutes of continuous inspection between charges. For further information on Spectronics Corporation visit *www.spectroline.com.*

SCHNEIDER ELECTRIC introduces AccessXpert, a fully web-based security management solution. Based on the latest in open-protocol support, AccessXpert simplifies and streamlines security management for today's on-the-move security staff. The new solution leverages secure, cloud-based technologies to provide building managers and security personnel with anywhere, anytime mobile access to video surveillance, intrusion detection, access control, alarm management, and other systems. In addition, it merges security with Schneider Electric's SmartStruxure building management system (BMS) to enable clearer decisions, faster responses, and maximum facility efficiency. For more information on Schneider Electric Products visit *www.schneider-electric.com/us*.

3M has introduced the 3M Easy Trap Duster sweep and dust sheets, a product designed to trap and hold up to eight times more dust, dirt, and sand than a conventional flat-fringed cotton dust mop and a professional version of a common household sweeping dust cloth brand. These disposable sheets can be used on both sides and have the power to trap more hair than traditional mops, glide through and trap hair on dry or wet floors, and pick up small particles like glitter and sand. Designed for the cleaning needs of a variety of facilities—including hospitals, schools, hotels, and gyms—the Easy Trap Duster sheets can be used with virtually any flat mop or duster to clean nearly every surface. For greater detail on all 3M products visit *www.3M.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.*

Index of Advertisers

Adams FM²	*www.adamsfm2.com*	49
APPA Drive-In Workshops	*www.appa.org/Training/DriveinProgram.cfm*	45
APPA Job Express	*www.appa.org/JobExpress/index.cfm*	42
APPA Publications	*www.appa.org/bookstore*	14
APPA U	*www.appa.org/training/appau.cfm*	50
Bartlett Tree Experts	*www.bartlett.com*	39
Busch Systems	*www.buschsystems.com*	5
Club Car	*www.clubcarinfo.com/edu/appa*	C3
Earth Planter	*www.EarthPlanter.com*	41
Ferguson	*www.ferguson.com/fsc*	23
Gale Associates	*www.galeassociates.com*	35
Miracle Method	*www.miraclemethod.com/collegehousing*	38
The Okonite Company	*www.okonite.com*	C2
PVI Industries	*www.pvi.com*	44
Reliable Controls Corporation	*www.reliablecontrols.com*	3
Sherwin-Williams	*www.swpaintshield.com*	C4
StayDry Systems	*www.staydrysystems.com*	13

Advertising in ***Facilities Manager*** is a cost-effective way to reach APPA members and introduce them to your products and services. Maximize your name identification and reinforce your company's products and services by multi-issue placements.

Reserve your space now by contacting Gerry Van Treeck at 847-347-7851 or *gvtgvt@earthlink.net.*

www.appa.org/FacilitiesManager/

1,000 JOBS. ONLY ONE
CARRYALL

SPECIAL UTV PACKAGES: JUST FOR COLLEGE CAMPUSES

Get the accessories your campus needs, simplify ordering and save money with Club Car's new Campus Packages for Carryall® 300, 500, 550 or 700 utility vehicles. The packages include:

- *A cargo box and tailgate tethers or a stake side and bedrails (Depending on model)*
- *Tail lights, brake lights, turn signal and horn*
- *Canopy top*
- *Folding windshield*
- *Locking glove box*
- *Rear-receiver hitch*
- *Heavy-duty front brush guard*
- *Extended-range batteries and single-point watering systems on electric vehicles*
- *A limited slip differential to upgrade performance and access areas that normally require a 4x4**

Learn more or request a demo at **clubcarinfo.com/edu/appa**.

**Available for Carryall 550 gas model*

Ingersoll Rand

U.S. COMMUNITIES
GOVERNMENT PURCHASING ALLIANCE

Club Car®

THE POWER TO KILL BACTERIA.

NOW IN 550 COLORS.

Introducing Paint Shield®, the first EPA-registered microbicidal paint that kills greater than 99.9% of Staph (*Staphylococcus aureus*), MRSA, *E. coli*, VRE*, and *Enterobacter aerogenes* within 2 hours of exposure on a painted surface. And it continues to kill these disease-causing bacteria for up to 4 years when the integrity of the surface is maintained.

For more information, visit swpaintshield.com

*MRSA (Methicillin-resistant *Staphylococcus aureus*), *E. coli* (*Escherichia coli*), VRE (Vancomycin-resistant *Enterococcus faecalis*)