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may/june 2017 • volume 33 number 3

features

A FOCUS ON CUSTOMER SERVICE

16 Customer Service and Facilities Management

By Mark Crawford

Without exceptional customer service, no company, organization, or institution can thrive—including higher education. Facilities management may be the most important part of this process, because it impacts every department and touches on so many aspects of the student experience.

22 Servicescape in Campus Facilities By Jason Farrell

The idea of the physical facility, or built environment, influencing its users in service industries is reinforced in an area of study known as the Servicescape. The author draws from his doctoral research to describe the concept.

28 Case Studies in Customer Service By Steve Glazner

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36 Space Planning as a Catalyst for Developing a Culture of Change

By Kathy Richards, P.E., CEFP, and Jim Thams, CEFP This article outlines the 2011 Northern Michigan University (NMU) building renovation project that fostered a paradigm shift in course scheduling for the entire campus, and changed how instruction is delivered on the campus.



Customer

Service

Case Studies

28

columns

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Compiled by Gerry Van Treeck









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Many Educational Opportunities to Experience in San Francisco

The time is now to register for the APPA/PCAPPA/BayAPPA 2017 conference in San Francisco, California. Hotel space at the Hilton San Francisco Union Square Hotel is filling up fast for the July 21-23 program. And don't forget to consider attending the preconference programming—Emerging Professionals (EP) Summit and the Senior Facilities Officers (SFO) Summit—scheduled for July 20.

We are pleased to have as a keynote speaker **John A. Jenson**, an expert on how to present yourself and represent your organization at the highest possible level. John's presentation will focus on his theme of The Clarity Imperative and will provide insight from his own experiences to show the importance of "consistent messaging."

In addition to three dynamic plenary sessions, we are pleased to share a small sampling of the excellent concurrent sessions from which you can choose throughout the conference.

A Return to the Sandbox: Leveraging Active Learning Spaces with Enhanced Technology in Construction Projects David Singel, Sam des Jardins, Walter Banziger, and Randy Stephens, Montana State University

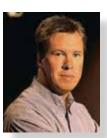
Big Data's Big Impact on Facilities Operations and Organizations Donald Guckert, University of Iowa

Branching Out—Growing Employee Talent Meredith Smith and Rob Shively, University of Wisconsin Madison

Building a Plan for Cleaning Steve Gilsdorf, Western Michigan University, and Brandon Baswell, Michigan State University

Components of an Intelligent Campus *Gerry Hamilton, Stanford University*

Contagious Principles Jeff Marcinkowski and Rence Meredith, Grand Valley State University



John Jenson

Creating a Dynamic Capital Construction Plan

Philip Jones, Sherrie High, John Adams, and Chris Gilbert, University of North Carolina Charlotte

Facilities + Sustainability = Living Laboratories

Hilary Ego and Joe Fullerton, San Mateo County Community College District

Hiring to Transform Your Organization Terri Willis, University of Colorado Boulder, and Jenna Elmer, University of Arizona

Motivational Interviewing with Custodial Staff

Chris Tankersley, Kent State University

Owning It All: Developing Executive Buy-In for Total Cost of Ownership Karyn Magnusson, University of British Columbia

Sustainability and the HBCU Experience Marion Bracy, Richard Peters, and Latonia Viverette Batiste, Xavier University of Louisiana (§)

Jarne

COMING IN JUL/AUG 2017

More News on GRITS

- Utility Infrastructure Renewal/ Business Models
- Annual FM Salary Study



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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 *avtqvt@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.

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About APPA

APPA promotes leadership in educational facilities for professionals seeking to build their careers, transform their institutions, and elevate the value and recognition of facilities in education. 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.



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We are pleased to announce the newly elected officers for APPA's 2017-2018 administrative year:

APPA 2017-2018 Election Results



President-Flect Don Guckert University of Iowa



Secretary-Treasurer Tony Guerrero University of Washington Bothell



APPA Elections

Vice President for **Professional Affairs** Dan Bollman Michigan State University

All new Board members will take office at the APPA 2017 conference in San Francisco, July 21-23, 2017. Many thanks to the Tally Committee for counting and verifying the votes:

· Al Stearns, Chair

· Mike Sofield



APPA Membership Renewal Notices Sent- Pay by Mail or Online

The 2017-2018 APPA membership year began April 1, 2017 and runs through March 31, 2018.

APPA accepts dues payments by major credit card through the APPA website at

www.appa.org via myAPPA, your personalized APPA website account. Renew your organization's membership today to continue receiving valuable APPA benefits.



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 next year's meeting and exposition. You won't want to miss this exciting gathering of fellow facilities professionals and exceptional speakers!

Registration is open!

http://www.appa.org/training/ APPA2017/index.cfm



2015-2016 FPI Report Now Available

The 2015-2016 Facilities Performance Indicators (FPI) Report is now available to help you assess, measure, and lead your institution to success. With over 288 learning institutions now participating, the report will empower you with the vital data, statistical references, and report-



ing tools needed to measure operations and performance. The report will also help identify capital asset realities and help you lead a successful facilities strategy that supports your institution's mission and vision.

The FPI report answers to the following questions, and more:

- How well is your facilities portfolio in alignment with your institution's strategic direction and academic focus?
- What are your facilities inventory, square footage, and building ownership costs?
- How efficiently do your facilities operate?
- How does your campus's facility performance contrast with that of its peer institutions?
- Is your campus adequately funding the facilities annual management budget? To access the report, log in to your myAPPA account page, go to the

myResearch heading, and under it, click on the "FPI Report Access" link.

The report is free to APPA members who participated in the survey, or it can be purchased:

- APPA Member/Nonsurvey Participant Report: \$500
- APPA Nonmember/Survey Participant Report: \$895

For additional information or to purchase the FPI report, please visit *http://www.appa.org/research/FPI/index.cfm*.

SAFETY IN PLACES OF PUBLIC ASSEMBLY



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Have a communication plan Plan a meeting place

WHEN YOU ENTER

React immediately Get Out! Stay Out!

Take a good look, locate exits Check for clear exit paths Do you feel safe





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CALENDAR OF EVENTS

APPA Events May 22-25, 2017

Essentials of FM Training Seminar, Colorado State University, *Fort Collins, CO*

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

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

Sep 10-14, 2017 APPA U (Institute and Academy), Providence, RI

Oct 16-19, 2017 ACUHO-I/APPA Housing Facilities Conference, Atlanta, GA

Regional/Chapter Events

May 27-29, 2017 Georgia Chapter Meeting (Jekyll Island)

May 30-June2, 2017 Ontario Chapter Conference (Waterloo)

May 31-June 1, 2017

Virginia Chapter Conference (Fairfax) - rescheduled from March

June 18-19, 2017 Wyoming Chapter Meeting (Casper)

July 12-14, 2017 Michigan Chapter Summer Conference (Big Rapids)

Jul 21-23, 2017

PCAPPA 2017 Conference in conjunction with APPA and Bay APPA, San Francisco, CA

Sep 17-21, 2017

Joint MAPPA/CAPPA 2017 Conference, 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.*

digest



APPA U OFFERS GRADUATE PROGRAMMING TO INSTITUTE AND ACADEMY GRADUATES

Next APPA U: September 10-14, 2017 Omni Providence Hotel Providence, Rhode Island

The most fundamental mission of APPA is the delivery of professional development courses that address the needs of the facilities management community—from that of the frontline supervisor to the most senior of our facilities officers. To that end, we are pleased to announce the addition of a new program to our portfolio: APPA U Graduate Programming.

The offering will provide graduates of the APPA Institute for Facilities Management or the Leadership Academy an environment in which to engage at a higher level of planning and strategic thinking. The program is delivered in a framework that allows for real-world challenges and diverse issues to be addressed in a collaborative setting, thus allowing for the opportunity to put into play the strategic solutions learned in previous APPA programs.

Participants will receive first-hand experience in broad-scope



analysis, decision making, collaboration, and presentation at a senior administrative level, including:

- Critical thinking
- Systems thinking
- Clearing the path/setting the stage
- Negotiating
- Strategic communication to leadership and staff
- And much more.

For additional questions, please contact Suzanne Healy, APPA's director of professional development, at *suzanne@appa.org*.

FOR MORE INFORMATION, VISIT

http://www.appa.org/training/appau.cfm

What Does "APPA" Stand For?

As you can see from the timeline below, APPA has had several names over its 103 years of existence. APPA was the acronym used for the Association of Physical Plant Administrators from the late 1960s through the early 1990s. Today, the association is known as "APPA – Leadership in Educational Facilities," and is most easily recognized and referred to as simply "APPA."

1914

Association of Superintendents of Buildings and Grounds of Universities and Colleges **1948** Association of Physical Plant Administrators of Universities and Colleges

1954

National Association of Physical Plant Administrators of Universities and Colleges (NAPPA)

1969

Association of Physical Plant Administrators (APPA)

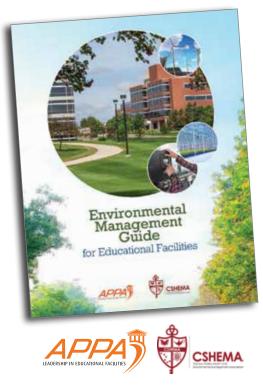
1991

APPA: The Association of Higher Education Facilities Officers

2007 APPA -Leadershir

Leadership in Educational Facilities

Coming Soon!



Environmental Management Guide for Educational Facilities

Getting in Front of Environmental Compliance

Colleges and universities are environmental leaders in teaching, research, and sustainability. Institutions need to be vigilant to the importance of environmental laws and regulations and to allocate the resources required for compliance. Additionally, environmental compliance has proved to be a moving target.

Since 1996, APPA and CSHEMA, the Campus Safety Health and Environmental Management Association, have collaborated to produce guidance documents to help educational facilities overcome the challenges of environmental compliance.

Contents:

- Elements of an Effective Program for Environmental Management and Compliance
- A Quick Reference Guide for Determining What Regulations May Apply to Your Institution
- Legislative/Regulatory Program Summaries (CAA, CWA, CERLA, EPCRA, FIFRA, RCRA, SDWA, TSCA, Resource Conservation and Recovery Act, and Toxic Substances Control Act)
- Environmental Compliance
 Resources
- Overview of Subpart K of RCRA
- Federal RCRA UST Management
 Requirements

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The Building Commissioning Handbook Third Edition

It has been 40 years since the inception of building commissioning (Cx) as a discrete profession. This third edition of *The Building Commissioning Handbook* captures the many changes in the building market that are – and will continue to be – advancing and accelerating the role and value of commissioning. The design, construction, operation, and optimization of increasingly complex building systems and assemblies requires unique and expanding skill sets along with broad and deep knowledge of building science.

Produced by APPA and the Building Commissioning Association, this handbook provides a sequential, phase-based approach to the building commissioning process for all who have a stake in understanding, participating, and delivering properly functioning higher education and other commercial and institutional facilities.

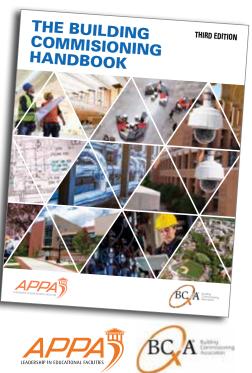
Contents:

Chapter 1. Overview

- Chapter 2. Benefits and Costs of Commissioning
- Chapter 3. New Construction Commissioning
- Chapter 4. Existing Building Commissioning
- Chapter 5. Ongoing Commissioning

Chapter 6. Building Enclosure Commissioning

Appendices and Resources



Strategies for Increasing Awareness and Improving the Ethical Climate: A Primer

By E. Lander Medlin

The following is an excerpt from the BOK Chapter, Managing Ethically.

thics—we hear about it, we talk about it, daily, at least the lapses. It touches our lives regularly in both positive and negative ways. So what is ethics anyway? How do we define it? Why is it so important? What is the basis for making ethical decisions? Without the sermon, how do we approach ethical situations or moral dilemmas in both



meaningful and practical ways? Some are uncomfortable with the

thought that ethics does not consist of an absolute set of principles. Nonetheless, we can develop and utilize a reasonable set of strategies and guidelines for ethical behavior and action in the workplace.

Given the workplace as the basis for discussion of these ethical principles and practices, it should also be reasonable to adopt the perspective that our moral point-of-view should concern actions and behaviors that serve the interests of that collective or the common good. This is important as it aids in the design and implementation of a framework of guiding principles and a set of practical questions we can use in making ethical decisions and taking action accordingly.

This basis also helps us address what is in the best interest of all concerned, since that may not align with our own specific or immediate needs and desires. Further, we need to be able to

work together to support the good of all. Therefore, the basic premise is concerned with the good of others (the collective in this case) and not just for oneself.

In this way, we can demonstrate that leadership is a blend of both competence (job knowledge and skill) and character (high integrity and moral responsibility). Certainly we need relevant skills and knowledge (job competence) to succeed in the workplace. Arguably, we need high integrity and a strong moral fiber (character) to succeed as well.

PRINCIPLES: A FOUNDATIONAL NETWORK

Principles stand the test of time and govern behavior with a resultant set of consequences whether we agree or disagree. This distinction may seem minor, but is critically important to ensure the organization and the collective it represents is focused on and working from a set of unarguable and objective foundational principles as their guide. Hopefully one's personal values align with these overarching principles.

From much of the literature on this subject, six foundational principles emerge and form the basis of this framework. They are:

- 1. Trustworthiness, Honesty, and Personal Integrity—the most important, first and foremost, of all the principles; without it, all the others fall apart
- **2. Responsibility for Self**—where character is built from the inside out, day in and day out; and where substance trumps symbolism every time
- 3. Freedom of Thought and Choice—where questions are encouraged and openness in decision making is valued
- **4. Being Equitable, Just, and/or Fair**—which is critically important that individuals in the organization feel they are treated in a just manner and will receive fair treatment whether they agree with the decision(s) or not
- **5. Respect and Caring for Others**—where compassion and mercy reign in establishing sincere and genuine understanding, which inspires trust and fosters openness
- 6. Respect for Human Rights and Dignity—where one hopes that universal law will outweigh

outdated societal norms, and humility is everpresent

TEN QUESTIONS YOU CAN USE TO AID IN ADDRESSING ETHICAL DILEMMAS

Like the six foundational principles, ten questions have been formulated that can be used to address any given ethical issue or dilemma that arises in the organization. They are:

- 1. What is the dilemma, issue, or problem? Although the question sounds too basic, it is extremely important to define the problem accurately and assemble all the facts immediately at hand. This way you know what you don't know and, therefore, what you need to further examine. In addition, this effort helps to understand the context and history associated with the specific problem at hand.
- 2. Is it legal? Will I be violating either civil law or organization policy?

This question forces you to research the actual legalities of the case and ensures you understand your own organization's policy is in some way unethical, you should seek to have it changed or modified.

- 3. How would you define the problem if you stood on the other side of the fence? Put yourself in the other parties' shoes. Doing so can enlighten your thinking and will illuminate others' perspectives.
- 4. What are the conflicting values and principles apparent in this situation?

It is important to determine where personal values and organizational principles come into conflict. Identifying the conflicts help to smoke out the ethics of any situation. This effort sets the stage for identifying options and their consequences.

5. What are the alternative courses of action/ options?

Forcing yourself and others to explore more than one alternative course of action helps open up the possibilities and ensures that all perspectives have been gathered for consideration.

6. What are the consequences, risks, and implications of each option?

Answering this question helps you further distinguish the most responsible course of action versus just taking the most expedient choice. It also highlights or discloses how others might be harmed by any particular course of action.

- 7. Can you discuss the problem with the affected parties before you make your decision? The engagement of all affected parties is often overlooked but critical to ensure there are little, if any, limitations of knowledge in your response or action. Unfortunately, the pressure of time and the potential discomfort associated with this type of engagement all too often hold people back from having such a critical set of conversations as part of the fact-finding process.
- 8. Is it balanced? Is it fair to all concerned in the short term as well as the long term? When it comes to balance, it is important to ensure consistency and predictability so there is no confusion about the rules of the game. In addition, it has been said that time alters circumstances. You will want to make sure that you have assessed the situation and its circumstances such that your response/action will indeed stand the test of time.
- 9. How will the decision make you feel about yourself? Could you disclose, without qualms, your decision or action to your boss, other employees, the newspaper, your family? This is clearly the litmus test for any action you plan to take. There is a standard question that deserves repeating here: "Would you want your decision to appear on the front page of the *New York Times*?" This type of disclosure (or its real possibility) should give you cause for pause and ensure that your character and the reputation/ brand of the organization is preserved.

10. What is your decision?

In any case, we have to come to a final conclusion and render a response or action. It is important to ascertain not only what your decision is in the end but also how it will be communicated.

As you can readily see, a great deal of work is involved in establishing ethics as an explicit and implicit part of the organizational culture. And don't underestimate the value of the organization's leadership serving as role models and guides and daily reminders of the importance of ethical behavior.

Ultimately, it's not really about compliance or adherence to rules and legalities. It's about the character of your leadership, your perceived fairness, and ultimately the reputation you and your team builds/ earns over time. (5)

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

Reflection on an Honor

By Paul Wuebold Vice President for Professional Affairs





empus Fugit . . . this Latin expression can be translated as "time flies." How many times have we heard and experienced this truth in our lives? I can attest that for my last three years as APPA Vice President for Professional Affairs, time has definitely flown by. As my term as an APPA officer draws to an end, I wanted to share a few thoughts regarding the Professional Affairs Committee's recent successes.

This journey started four years ago with a simple question from a close colleague asking if I would be interested in running for this position. After all, I really enjoyed the APPA mission and the APPA members, but initially felt that my relative newness to the organization would not make me the most qualified candidate. However, after research and deliberation, I decided to run for election and thus set off on my three-year adventure.

TAKING STOCK

One of the first things we set out to do was to fully understand what the Professional Affairs Committee's role is in terms of professional development and member benefits. APPA President Randolph Hare asked us to strip down our responsibilities to the core and then analyze each one to determine if they were "value added." For the most part, we were the scoring venue for annual APPA individual and institutional awards and recognition.

Peer recognition is extremely valuable in any organization, and there are special bragging rights tied to being the "best of the best." But we felt that there were many more months of the year that could also be utilized for organizational or member enhancement, so the committee members determined to take a more active, 12-month role in these activities. And now the payoffs are being realized more and more as their ideas become reality. The key to the success of all of the changes and new programs we introduced is that they are focused on improving both our people and our culture.

DEVELOPMENTS AND CREATIONS

The first action step we took was to establish a new charge and mission statement that would better define the emerging roles the committee has envisioned for our members. The Professional Affairs Committee (PAC) has a key role in developing, recommending, and executing best practices within the educational facilities environment. It is a launch platform for the vetting of ideas, information, and tools to sustain and enhance organizational and leadership responsibilities.

Further, it is responsible for recognizing institutional excellence by considering applications for honors such as the Award for Excellence, the Effective and Innovative Practices Award, and the Sustainability Award, as well as recognizing individual service and achievement by considering applications for the Meritorious Service Award, the APPA Fellow designation, and the Pacesetter Award, among others. The number of annual award submissions this year hit a high, which means that many institutions are doing great things worthy of peer recognition. The last few years of PAC have produced many new and important programs for our members.

One of the most significant recent developments was the establishment of a "Best Practices" link on the APPA website. As the PAC scored annual awards submissions, it quickly became obvious that the number of available awards was simply not sufficient to recognize the number of qualified nominees. As such, the PAC felt that establishing a "Best Practices" library would help recognize all the great achievements and innovations our members are pursuing, while helping other members jump-start initiatives at their institutions without reinventing the wheel. Eventually the library will be filled with many categories of accomplishments, making it easy for members to access and utilize a great deal of valuable information.

Another important development for our members is the planned creation of "Quick Hits" links, enabling many successful institutions to submit programs, presentations, databases, evaluations, and checklists. These quick hits are easily accessed on the PAC webpage and afford members more useful information to help them mature their organization and take it to the next level of success. The most important feature of these items will be that they are transferable, meaning that any institution can easily edit and tailor the information to meet their specific goals.

An authorship program has also been established within the committee in connection with *Facilities Manager* magazine, allowing those on the committee to write relevant, timely, and thought-provoking articles that will be of interest to a wide variety of our members. The articles often touch on hot topics or successful and innovative practices used at their institutions. Hargrave, Jason Wang, Roy Ruiz, and Steven Gasser. Other important members that rotated off the committee were Leon MacLellan, Keith Woodward, David Stapleton, and Luis Rocha. Further, I want to thank APPA Executive Vice President Lander Medlin and her staff, especially Christina Hills, for routine support and advice. Finally, I want to extend my thanks to the APPA voting members who entrusted me to lead this committee. I am proud of our accomplishments, but our work is not done. In July a new VP join the APPA Board, and they will continue to move forward with even more improvements. While I could certainly sum up the last three years with "tempus fugit," it's also true that "time flies when you're having fun!"

I hope to see you all at the APPA Annual Conference in San Francisco, July 21-23. (\mathfrak{F})

Paul Wuebold is senior executive director, facilities and grounds at the University of Alabama in Tuscaloosa, AL. He can be reached at *pwuebold@fa.ua.edu*.



Access to important, relevant, and interesting

information has been one of the key highlights of PAC's evolution. Beginning very soon, there will be monthly facility manager knowledge quizzes on the PAC webpage. The intent is to increase/confirm individual knowledge of managers' professional roles as well as generate interest and participation in the APPA Certified Educational Facilities Professional (CEFP) program. Equally important in this initiative is to get the members to go to the APPA website often and use it as their go-to source for professional facilities manager information.

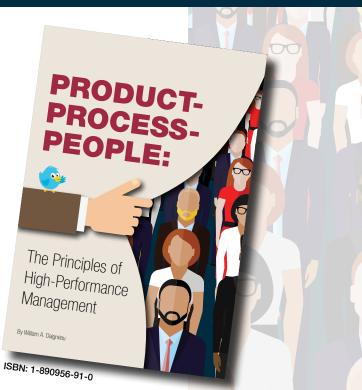
Finally, one recent addition to the PAC webpage is an "On This Date" section. Here you will find interesting historical information affecting our professional mechanical, construction, and maintenance world.

TEMPUS FUGIT

I want to extend my personal thanks to those valuable committee members past and present: E. J. Hook, James Harrod, John Michalewicz, Marion Bracy, Ron Tarbutton, Tony Ichsan, Beth Clark, Douglas Laditka, Heather Get Your Copy of APPA's Newest Publication!

PRODUCT-PROCESS-PEOPLE:

The Principles of High-Performance Management



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.



To purchase your copy, visit **appa.org/bookstore**

Getting the Most Out of Meeting Your Business Partners at the Hall of Resources

By Daniel Barlup

avigating the Hall of Resources like a pro is one of my favorite parts of our annual meetings. I believe that the most valuable resource our organization has are our business partners. I have had the opportunity to attend many shows, and I always look forward to walking into the hall and meeting new business partners, as well as visiting those I have known for years. I was lucky to have great mentors who taught me how to build great relationships. I find it so interesting to walk around and engage with everyone, even if it really has no relevance to my specific duties.

Here is how I like to approach a hall full of business partners . . .

GETTING A GOOD START

I like to have a plan. So when I walk in, the first thing I do is review the show attendee list and circle the booths that I definitely need to visit, and think about what topics I want to discuss there. Both your time and their time is very limited, so try to stick to specific topics and don't be afraid to ask, "Can we continue this discussion after the conference?"

These folks are typically experts in their fields, so don't be afraid to listen and learn about what they have to sell or represent. I really enjoy learning about new technologies in my field, and recently was shown how to use virtual reality glasses to review a project. The presentation was great, and we ended up using it not long after the presentation was over.

I'm not a big fan of picking up books or flyers, however, as this is against what our organization

promotes for sustainability. So, I usually ask that more information be emailed to me (or a link sent) so I can pull it up again at a later date.

MAKE THE ROUNDS-MORE THAN ONCE

After I have met with the companies I definitely wanted to get to, I always make it a point to cover the entire hall at least once, and see if there is something new to discover. I always find new and interesting things that someone else at my organization might find interesting. If that happens, I stop and give them the name of the person whom they should contact. They always appreciate the referral, and my colleagues at work appreciate the new information as well.

EVERYONE BENEFITS

The net rewards for spending a few hours in the Hall of Resources have helped me throughout my career, and will continue to do so. I have built many relationships that have been beneficial to my institution—and to the business partners I have met as well.

So the next time you see me walking around the hall, please say hello—I would be happy to introduce you to some of the friends I've made while exploring the booths. (5)

Daniel Barlup is supervisor of utilities at the Office of Physical Plant at Penn State Harrisburg, in Middletown, PA. He can be reached at *stooks@geneseo.edu*. This is his first article for *Facilities Manager*.

membership matter

Customer Dervice

and

technology access lighting campus safety janitorial services building design waste management. electrical maintenance utility systems Sustainability landscaping communication 16 MAY/JUNE 2017 FACILITIES MANAGER

Facilities Management

By Mark Crawford

ithout exceptional customer service, no company, organization, or institution can thrive—including higher education. Students and their families will lean toward colleges and universities that excel at delivering their mission and fulfilling their promise of a rewarding student experience. The key to this success is building a deep customer-service culture across all departments and all job levels. In fact, facilities management (FM) may be the most important part of this process, because it impacts every department and touches on so many aspects of the student experience.

"We have the silent support staff keeping the lights on, cleaning buildings, repairing broken or dysfunctional systems, mowing the lawns, and shoveling the snow—a 24-hour service," says



Alexandria Roe

Alexandria Roe, associate vice president for capital planning and budget for the University of Wisconsin System Administration in Madison. "Facilities staff have the technical skills to operate and maintain complex building and utility systems. And a good design and construction division will ensure that facilities is an integral part of the design and construction process for all capital improvements."

FM also impacts customer service by providing well-designed

and maintained landscapes that offer opportunities for outdoor recreation, learning, socializing, and inspiration. Well-designed and maintained buildings provide an environment that is conducive to learning. "Imagine trying to learn in a classroom with broken chairs, shades that don't screen the sunlight, heating systems that aren't functioning properly, lights that flicker, poorly located electrical outlets—even squeaky



Joyce Topshe

doors," says Joyce Topshe, associate vice president for facilities at Wesleyan University in Middletown, Connecticut. "Any of these issues could become a distraction from the learning environment."

When a facility is well maintained and working properly, it simply becomes the backdrop. The FM goal is to create facilities that enhance the learning environment by creating comfortable seating for students to interact with facility, providing power and Internet to enable learning in a variety of spaces both inside and outside the classroom, and constructing sustainable buildings that are energy-efficient, comfortable, and durable.

Creating and maintaining an excellent customer-service culture is not an easy thing to accomplish, and depends greatly on shared vision and buy-in at the top. Without these, an education-

al institution will limp along, losing student prospects to other universities. However, a sharply focused, customer-centric FM plays an essential role in engaging students, helping them to succeed, and fulfilling the school's teaching and research missions.

"Further," adds Michael D. Gardner, director of physical plant services for the University of the South in Sewanee, Tennessee, "outstanding customer service is



Michael Gardne

critical for communicating to our stakeholders that we are managing our resources in the most cost-effective manner possible, as well as adding value to the university's mission."

DEFINING CUSTOMER SERVICE

Customer service is the ability to understand, acknowledge, and exceed the needs of the customer. This includes providing positive, professional, timely, and fair responses to student inquiries. By providing high-quality, safe, and clean facilities, FM strengthens recruitment and retention. Every square foot of



building space should be purposeful and well maintained. But customer service is not just about mechanical prowess and speed—it also requires dedicated staff who are attentive, personable, patient, and truly care about the customer experience.

"I want anyone who interacts with our facilities to feel respected and listened to," says **Keith Woodward**, associate vice president of facilities operations at Quin-

Keith Woodward

nipiac University in Hamden, Connecticut. "I want them to feel satisfied by the experience."

Chuck Scott, APPA President and executive director of facilities management, parking, and transportation for Illinois State University in Normal, agrees.

"People don't need to set foot on my campus to form an opinion of Illinois State University," says Scott. "They may drive



Chuck Scott

by or simply locate us on the web. Our marketing materials certainly depict students and their various opportunities, but they also show our work. I periodically remind facilities staff of their importance in helping our university advance its mission."

Those who deliver superior customer service are mindful of the moment, pay attention, and listen. Facilities staff interact with students on a daily basis. Students often participate with staff on facilities committees—for example, building design, sustainability, and annual major maintenance. FM staff must bear in mind that the community's perception of facilities is their reality. "I think a lot of people believe customer service is about saying 'yes' all the time, and that's not true at all," says Woodward. "It's about delivering your service to the end user in a way that aligns with the university mission."

Perhaps the greatest impact of outstanding customer service is on the morale of facilities staff, and being sure they take pride in

the essential role they play in the student experience.

"It's powerful to hear FM staff tell you why they are important to the institution's success," says **Michelle Frederick**, assistant director of workplace learning and development at American University in Washington, D.C. "For example, knowing they are contributing to student learning by making sure dorms and



Michelle Frederick

buildings are at their best for their living and learning. When they understand this, they feel empowered to make decisions that benefit the customer, the facilities department, and ultimately the institution."

HOW SOCIAL MEDIA CAN ADD VALUE TO CUSTOMER SERVICE



Social media (SM) provides facilities managers with an additional option for providing exceptional customer service, especially to students. Facebook, Snapchat, Twitter, Instagram, and texting are all effective means of communication.

SM can be an effective way to communicate with customers and to market the facilities department. "It really is best used as a source for information sharing information about projects, closures, and statuses, and educating customers about accessing facility services and changes to services," says Michelle Frederick. "However, this does not mean facilities needs to feed the social media beast on a daily basis, but rather can use it as a strategic tool in their marketing and communications planning."

If the purpose is to reach out to students and faculty, states Alex Roe, "then the facilities management organization should invest in communication strategies to reach them." Another approach is possibly partnering with university media departments to help distribute the FM message. Also, says Roe, "we need to begin to transition our organizations into a communication style that millennials use."

Further, SM is not just for sending out notices and good news—those involved must be ready to respond quickly and effectively to bad or disruptive news. "Any misstep by any department—not just facilities—can be out on social media in literally seconds. This requires a social media team that is nimble and follows a well-devised strategy for addressing negative comments," says Bob Carter.

PROVIDING ENOUGH RESOURCES

Customer service starts during the interview phase. There is no question hiring for skill is paramount, but hiring people who fit your culture and can interact positively with students is equally important. The reality is that students will likely spend as much time, if not more, with students than with the custodian in their residence hall than with faculty members. "There is value and comfort in knowing that an employee can do their job and handle themselves under the pressure of external forces," says Woodward.

Maintenance staff have the knowledge and technical skills to get the job done. Some maintenance staff are naturally good at customer service; others require training. Frontline staff must be empowered to make decisions without fear. Technology, tools, and financial resources are also needed to support training and development.

"Training and clarity for facilities staff about how to interact with customers and how complaints, concerns, and issues are addressed without becoming a problem is essential," says Roe. "There needs to be a clear process for dealing with disputes."

Many institutional leaders are academics and may be too

data-driven or rely too much on statistical analysis, ignoring the human element, especially when dealing with some of the lowest-paid staff at the university. It is paramount that senior leadership fully comprehend the importance and the diverse range of the services FM delivers (and the "FM value"



Robert Carter

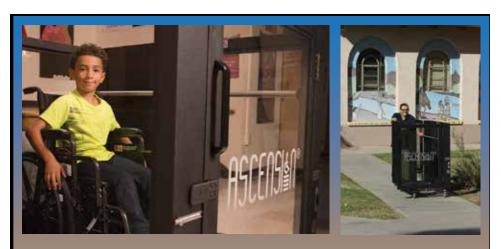
FM faces in providing effective customer service. Senior facilities officers often find themselves lobbying for necessary resources; the resources that APPA provides are invaluable to this effort. "For example, APPA's custodial staffing guidelines have been particularly helpful to our facilities team in making the case for sufficient re-

sources," says Robert J. Carter, as-

when budget allocations are decided). A lack of knowledge in this area can lead to erroneous assumptions about the challenges sociate vice president of physical resources for the University of Guelph, Ontario.

There are always pressures on facilities staff—especially when funding is tight. A good start for managing expectations regarding customer service is to inform the users themselves (students, staff, and faculty) about the level of services available for particular issues. This can reduce misunderstandings about customer-service expectations—for example, frequency of cleaning and trash removal, or time needed to complete a work order. "If a facilities department isn't well staffed, it's hard to communicate to customers if employees are spread too thin," says Roe. "The organization must set up protocols for communication."

Data is also needed to make informed FM decisions. Data can be derived from surveys, work orders, and interaction with community members. Benchmarking data with peers is essential for understanding how the college or university operates relative to peers. It's also valuable to benchmark outside of higher education and look to the hospitality industry for lessons in customer service. Another approach is hiring a third party to assess the conditions of the campus relative to peers and to monitor the performance of the facilities organization.



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FEATURES OF EXCELLENT CUSTOMER SERVICE



"Deliver and communicate. When something is going to be done, make sure it's done with communications along the way." *—Keith Woodward*

"Email or web-based requests should be automatically acknowledged to the customer. Follow-up emails to the customer regarding the status of the request are always appreciated." *—Joyce Topshe*

"FM leadership must establish an operational service vision, standards and measures, and [provide an] opportunity to learn and grow and trust." —*Michelle Frederick*

"Customer service is timeliness, positivity, professionalism, and sometimes saying 'no,' while making them feel okay about why the answer is no." —*Michael Gardner*

"The key is making it a 'one-stop-shop' experience for the customer and not telling the customer to do the legwork." *—Robert Carter*

"If a facilities department is not well staffed, it will be more difficult to communicate effectively with the customer." *—Alexandria Roe* Changing operations to become more customer-centric is a long-term goal that doesn't happen overnight. It requires a major shift in organizational culture. The SFO must be an effective leader and be committed to providing excellent stewardship of FM resources and services.

When a department embarks on service-culture journey, a lot of innovation can happen quickly, which can create uncertainty. So it's important to stay positive. "It is a marathon, not a sprint," says Gardner. "[FM needs to] maintain a broader perspective, to be transparent and manage expectations."

The payback in building a customer-centric culture can be huge. Of course, there is the increased satisfaction from students and their parents, which leads to improved credibility and higher enrollments. For Frederick, the

"We've been using APPA FPI information (Facilities Performance Indicators), as well as using a capital/condition assessment consultant, which we had never been done before. These are great tools in explaining our resource challenges to our formerly ignorant customers," says Gardner.

Facilities leaders should frequently tour their own campuses with the admissions group and see the campus from the perspective of prospective students and their families. Focus groups and other individual sources can also generate meaningful data—however, if you ask for their participation, "be sure to use the data, identify doable changes, and most importantly, communicate this back to the customers," cautions Frederick.

MOVING FORWARD

Higher education is a competitive marketplace and facilities management plays a major role in the recruitment and retention of students on campuses. The built environment is the "packaging" for the educational product. "If our customers do not find the campus in great condition and/or are not satisfied with our customer service, they can choose another college without ever acknowledging the reasons," says Topshe. most important result of outstanding customer service is higher employee engagement. "Studies show that if staff understand their purpose, and feel they contribute not only to their personal success but also the success of the department and the institution, they come to work almost every day bringing their A game. Organizations driven by purpose and values outperform comparison companies sixfold."

Working in a facilities department is about customer service. Although FM doesn't teach, place students in internships, or perform on a court, stage, field, or arena, it ensures all those environments are performing at peak potential. "I think having a relational leadership style goes a long way toward the success of the facilities organization," says Woodward. "Your opportunities for success are greatly enhanced if you have spent time cultivating positive relationships within the organization, even when things aren't operating at 100 percent."

Mark Crawford is a freelance writer based in Madison, Wisconsin; he can be reached at *mark.crawford@charter.net*.

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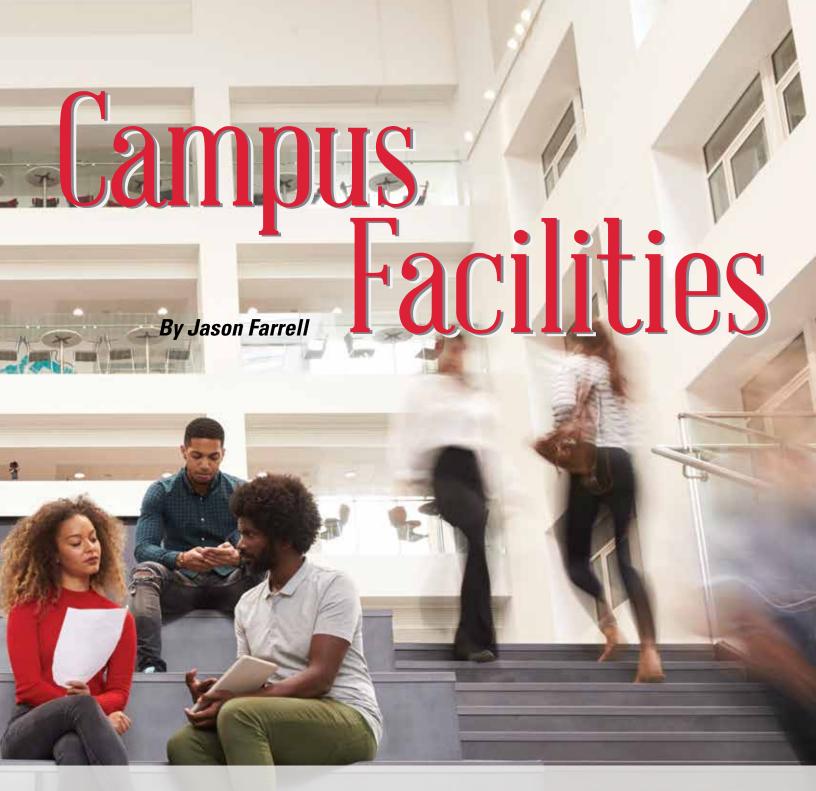
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Servicescape in

For the last 14 years I have worked in the Facilities Department at the University of Hartford. Prior to working in facility management (FM), I spent 10 years in progressively responsible positions in student affairs, including many years in campus housing, the final one as assistant director of residential life at the University of Hartford. In this role I was responsible for addressing residents' concerns related to room assignments and living conditions. In the interim between working for student affairs and FM, I was employed by a property management company, renting apartments and managing repair contractors, apartment applicants, and tenants. This company managed

mostly residential properties, and most of the work involved dealing with issues arising from facility failure: a leak, no heat, an elevator bulb burnt out, snow removal, etc.

In each of these professional settings it was obvious that the physical surroundings influenced individuals' experiences. As facilities professionals fully understand, whether on-campus or in the community, if people have clean, safe, and comfortable accommodations, they are much more pleasant and easy to deal with. The opposite is true as well: When something goes wrong, it is almost impossible get beyond the issue. No tenant or campus resident wants to hear about the holiday window decorating



contest when their shower only runs cold water. Beyond the residential experience, the influence of the physical facilities is evident in other business functions of higher education as well. The message is clear that in order to effectively teach, organize events, or socialize, the physical campus has to be able to support all types of activity.

The notion that campus facilities influence user experiences is a well-studied subject. Results have demonstrated that built environments at colleges and universities are key contributors to student decisions to enroll in and remain at particular institutions, to higher levels of student satisfaction and learning, and importantly, to student perceptions of service quality. All of these measures seem to support the critical components of the business model in higher education: to attract and retain high-quality students, provide value, and ensure a first-rate experience.

WEATHERING CURRENT CONDITIONS

Given the current landscape of higher education, it may be beneficial for institutions to examine ways to further tap the potential the physical campus can present. Issues at the forefront include an increasingly unsustainable cost model—reports have indicated that the growing cost of a degree has outpaced the

SERVICESCAPE

emphasizes the physical environment in which a service function or process takes place.

growth of income in the United States. In addition, the longterm financial burden of student loans has fast become the country's largest source of unsecured debt. Further complicating the challenge, for-profit higher education institutions are growing the fastest, and online institutions have the highest enrollment, suggesting that families are choosing to spend increasingly limited education dollars in more varied ways. Also notable is a substantial and growing amount of deferred maintenance at brick-and-mortar campuses. Various reports estimate the total U.S. need to be as high as \$36 billion. Taken together, these factors may have the potential to disrupt the operations of individual institutions, along with the entire higher education industry.

The ability for the industry to adjust to these changing conditions is likely key if it is to remain a viable option for those looking to gain and grow skills and knowledge. Ultimately this boils down to institutional effectiveness at successfully competing for high-quality students and employees (i.e., faculty and administrative staff).

Michael E. Porter's 1985 work, *The Competitive Advantage: Creating and Sustaining Superior Performance*, supports the idea that singular components of an organization, such as the physical campus, can potentially add to perceptions of differentiation and lead to a competitive advantage. Such a strategy of differentiation through strategic management of the physical campus could be a way to achieve an advantage and weather the current conditions.

INTRODUCING SERVICESCAPE

The idea of the physical facility (or built environment) influencing its users in service industries is reinforced in an area of study known as the *servicescape*. Introduced by Mary Jo Bitner in 1992, the model encompasses the total configuration of environmental dimensions in a service setting and emphasizes the interconnectedness between the physical environment in which a service is delivered and the mood, attitudes, thoughts, and behaviors of those operating within it. Specifically, Bitner maintained that distinct servicescape elements could influence internal responses (i.e., emotional, cognitive, or physiological) of either customers or employees. In turn, the way an individual responds to the collection of various elements ultimately influences their behavior.

Bitner categorized environmental elements into three distinct groups: ambient conditions (e.g., air temperature, sound levels, odors); spatial layout and functionality (e.g., room/building adjacencies, seating styles, walkways); and implicit and explicit communicators (e.g., quality of finishes, artwork, visible deferred maintenance). These elements are thought to influence individuals' reactions and lead them to exhibit approach behaviors (i.e., attending, joining, or affiliating) or their opposite, avoidance behaviors (i.e. *not* attending, joining, or affiliating). Emphasized in the servicescape narrative is the idea that this influence extends beyond customers and includes all those operating in the service environment, such as employees and visitors, influencing each in a unique way.

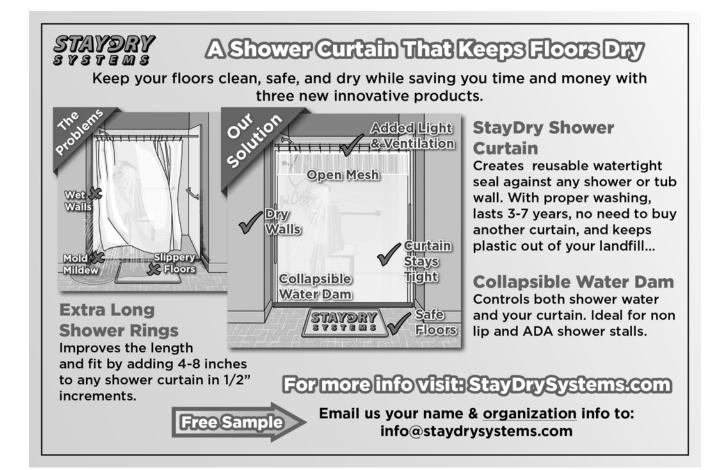
The influence of environmental elements of the servicescape has been studied across service industries with a level of physical complexity similar that to a college campus, such as casinos, golf courses, and restaurants. In each study, elements of the servicescape were found to influence attitudes and behaviors. One study in particular found that positive experiences with cleanliness (an example of an implicit communicator) led to approach behaviors such as increases in tip sizes in restaurants and repeat bookings for a taxi service. In sum, elements of the servicescape in a service firm have been found to contribute to differentiation, lead to positive choices by customers, and affect employee behaviors.

UTILIZING THE MODEL

Recent research conducted utilizing the servicescape model at the University of Hartford took this very approach to try and gain a better understanding of the scope of influence the physical facilities had on users, and attempted to identify which particular elements were most influential. The study comprised nearly 900 volunteers drawn from the population of approximately 8,500 students (full-time, part-time, graduate and undergraduate), faculty (full-time and adjunct), staff, and administrators.

Participants completed a researcher-developed, online questionnaire asking them to rate their agreement with whether or not particular elements of the physical campus influenced their experiences. Those that completed the questionnaire were asked if they would be willing to take, then email a photo of a campus element that influenced their experiences. A subsample of that group were invited to take part in an individual interview to describe their photo and discuss the specific influence that element had on them. In addition to the questionnaire responses, the data comprised over 60 photos and 20 interviews.

The study results indicated that the campus's built environment influenced a majority of the participants, which supported the findings in the previous research noted earlier. Specifically, interviewees talked about personal reactions (both positive and negative) to elements of the campus servicescape that ranged across emotional responses, cognitive responses, physiological responses, and outward behaviors. One participant noted that the condition of the campus lawns made her "happy," and another described feeling "comfortable and safe" because of the upkeep and appearance of the grounds.



Additionally, participants speculated about the influence they believed campus elements had on current and prospective students as well as employees. Describing the condition of a public bathroom in a campus building, one interviewee lamented that "if parents or [prospective] students . . . go in there, they've got to think that this university doesn't care about the buildings at all." In line with Bitner's framework, there were some notable differences in the questionnaire scores between students and employees on various scales.

OF PARTICULAR INFLUENCE

In addition to the broad influence reported by participants, the data analysis also indicated categories of specific elements that had a particular influence. Unsurprisingly, respondents noted overwhelmingly that examples of items in poor condition, generally related to cleanliness or level of maintenance, influenced their experiences. Additionally, people reported that decorative elements outdoors influenced them very positively.

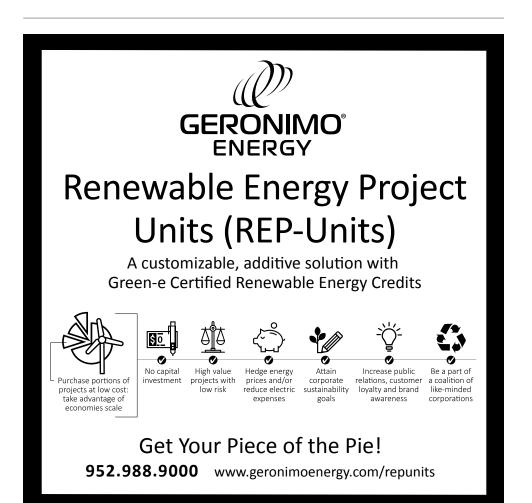
Bitner categorized such elements as implicit communicators and suggested they have a particular importance in forming first impressions and communicating norms and expectations of behavior. Importantly, elements in poor condition were described by interviewees as significant signals to current and potential community members. One participant agreed that visible "maintenance issues create an impression on what [visitors] should expect with the rest of the university."

Other prominent themes of individual elements that emerged from the study were the influence of pedestrian and vehicle travelways, along with the functionality of academic spaces. One interviewee described the university walkway system, as "effective," while another suggested that they were successful in "comfortably moving [people] between the network of buildings" on campus. Conversely, in some cases, the walkways and roadways were identified as presenting challenges for people with differing abilities, with one interviewee referencing her photo and stating, "Look, a crosswalk that goes nowhere," and another suspecting a lack of sensitivity in a decision to "take out the ramp and put a set of stairs in."

With respect to academic spaces, respondents shared mostly negative experiences and identified elements of the facilities that did not meet their needs. One participant described the functionality of one classroom as "undermining the educational

> experiences of students" because she perceived the furniture as uncomfortable and the technology outdated. Another reported feeling "cheated" out of higher education due to a particular classroom's condition. Students also talked about the problem of current classroom spaces being insufficiently outfitted to accommodate small group projects, coupled with a lack of effective spaces for out-of-class team assignments, noting that "we just go find space off-campus, at Starbucks or something."

> While the specific findings cannot necessarily be generalized to other institutions, the results have implications for campus administrators as well as FM departments. Administrators may do well to establish a culture that encourages a community of shared stewardship of the physical facilities. Related to this study, participants identified visual cues across campus in the form of both decorative elements outdoors, and elements in poor condition that influenced their experiences. Both sets of elements were described as influencing current campus stakeholders and potential new students and their families. While FM departments are tasked with upkeep and repair,





given the reported importance of campus elements, it seems to make sense that everyone becomes invested in the physical environment.

In addition, university administrators may want to consider opportunities that could result from strategically managing the servicescape when prioritizing resources and developing strategic plans. Specifically, they could attend to the connection that appears to exist between the campus facilities and the teaching and learning process.

At the University of Hartford, both students and employees reported that, among other things, their experiences were influenced by maintenance and cleaning issues, and that classroom functionality affected their academics. As each campus is unique, administrators could conduct similar examinations of the servicescape at their own campuses to better target funding of deferred maintenance issues and rehabilitation projects. In short, campus administrators could consider the role of the physical facilities as a more instrumental piece of organizational strategy.

THE FM STAKEHOLDERS

Specifically related to FM, operations may wish to consider the perspectives of various groups of stakeholders (i.e., students, employees, visitors) when making decisions, such as those related to daily work priorities or targeting funds set aside for the rehabilitation of spaces. They could establish systems that capture these viewpoints to positively influence the experiences of people visiting, working, and going to school there.

Additionally, facility departments could emphasize procedures to regularly inspect all campus areas to identify and repair items

in poor condition before community members notice them. The effectiveness of such efforts will be determined by how efficiently the identified work is processed and how thoroughly it is completed. As reported by participants, such elements can influence the experiences of current students and employees, and can present a more inviting campus to potential students.

Lastly, FM departments could consider prioritizing capital projects and renovation work that best addresses areas that most influence the experiences of campus stakeholders. While regular campus inspections and the stewardship of facilities staff can address the visual cues, the functionality of the campus involves longer-term projects and planning. By incorporating many perspectives, FM staff can more effectively determine areas of focus and maximize positive influence on students and employees.

In sum, faced with current pressures, higher education institutions, particularly tuition-driven ones, may gain a competitive advantage if they can better understand stakeholders' perceptions of how various elements of the built environment influence their campus experiences. A university's servicescape could serve to differentiate or distinguish the organization from similar entities, if university administrators and FM staff apply this information to planning and designing campuses, and managing their facilities. (5)

Jason Farrell is director of facilities at the University of Hartford in Hartford, CT; he can be reached at *farrell@hartford.edu*. This is his first article for *Facilities Manager*.

Case Studies of Customer Service

Compiled by Steve Glazner



According to the 2016 APPA Thought Leaders report, *Remaking the Facilities Organization*, "Most colleges and universities do not traditionally think of themselves as being in the business of customer service...Most of us immediately recognize excellent customer service when we experience it, but few of us spend enough time thinking about what goes into that experience. Superior customer service doesn't happen by accident."

Everyone involved in the campus facilities management, operations, and capital construction operations is responsible for building strong customer service and customer expectations throughout the college, university, or school. Following are a few examples of the thoughtful, innovative, and meaningful ways in which the facilities organization has improved customer service and built relationships at their institutions.

CENTRAL OREGON COMMUNITY COLLEGE

Bend, Oregon Submitted by Mike Beaulieu, Campus Services Operations Supervisor



SNOW REMOVAL FOR DISABLED STUDENTS, STAFF, AND FACULTY

Located on the eastern flanks of the Oregon Cascades mountain range, Central Oregon Community College (COCC) certainly gets its fair share of wintry weather—multiple days/ weeks of cold and deep snows. These weather conditions alone can present snow removal challenges. Add to that the fact that the main Bend campus is located on the side of a 400-foot-high butte, and you've got a recipe for disaster if removal operations are not handled smoothly.

Campus Services is responsible for snow clearing on almost 8 miles of roads, over 500,000 square feet of parking, 7 miles of sidewalks and stairs, and 65,000 square feet of patios. This is accomplished by following a comprehensive snow removal plan created in 2015, which utilizes a series of maps and charts that assign equipment to prioritized areas of the college.

A dedicated approach to maintaining clearance at all 78 ADA (Americans with Disabilities Act) parking spots throughout campus is one of our top priorities. We have a skidsteer with a blower attachment as well as a newly purchased four-wheel drive Gator equipped with a blade. These are assigned to the ADA spots. Plowing of these areas begins as soon as we receive 2 feet of snow. Adjacent access ramps to sidewalks are cleared by hand if necessary. We take great pride in providing quick and easy access to everyone at COCC regardless of weather conditions or access needs.



QUINNIPIAC UNIVERSITY

Hamden, Connecticut Submitted by Keith Woodward, Associate Vice President of Facilities

HIRING FOR CUSTOMER SERVICE SKILLS

Hiring for skill is critical and vitally important, but never underestimate the value of working with the customer (i.e., student, faculty, staff, trustee, or visitor). I believe it starts with the interview process, where you ask relevant customer-service questions such as, "How do you handle difficult people?" While this is surely important, I also believe it's equally necessary to assess the attitude of the individual you are interviewing.

In his article "Hire for Attitude, Train for Skill," (*Harvard Business Review*, February 2011), Bill Taylor writes that successful business cultures "all understand that you can't create something special, distinctive, and compelling in the marketplace unless you build something special, distinctive, and compelling in the workplace. And the best way to build something special in the workplace is to hire for attitude and train for skill."

For example, if we were to hire an electrician at Quinnipiac University, we would be looking for either an E-1 (contractor level) or E-2 level employee. Most candidates come to the interview with the necessary skills for the job, but I believe you must use the interview process to find the electrician who would provide the best customer service. That goal is paramount to the success of the campus culture and our operations.



UNIVERSITY OF CALIFORNIA DAVIS

Davis, California Submitted by Kyle Asire, Territory Manager, Western Region, Gordian

SWATTING ZIKA: 90 DAYS TO RENOVATE THE LAB

Within the walls of the UC Davis Biosafety Level 3 laboratories, cutting-edge research is underway into the Zika virus and the ecology and evolution of disease-causing viruses transmitted by mosquitoes. Just prior to 2016, the university learned that these crucial labs would have to be temporarily reconfigured to accommodate stricter guidelines. If these guidelines were not met, UC Davis risked losing the research grant to another university. They were given a 90-day window.

UC Davis immediately went to work planning the renovations and quickly discovered that the short time frame posed a potential pitfall for completing the project on schedule. To combat this issue, the university utilized a Job Order Contracting solution, an alternative construction procurement method that establishes local, competitively bid prices up front for an indefinite number of projects. This upfront contract enabled UC Davis to increase collaboration with the awarded contractors, so construction could begin faster.

Ultimately, the renovations were completed within the 90day window, allowing UC Davis to keep its grant. This resulted in the laboratories providing groundbreaking progress to help the Centers for Disease Control and Prevention (CDC) contain and limit the effects of the Zika virus on the United States, possibly averting an extensive outbreak throughout the nation.



UNIVERSITY OF CALIFORNIA SAN FRANCISCO

San Francisco, California Submitted by Jodi Soboll, Director of Infrastructure and Utilities Services, UCSF, and Meredith Hargreaves, Senior Lean Practitioner, Haley & Aldrich, Inc.

FACILITIES INVESTMENT NEEDS: STARTING WITH THE CUSTOMER

In June 2016, UCSF's Facilities Services department faced a vexing problem. It identified annual Facilities Investment Needs (FIN), but the data had historically been inconsistent and unpredictable, leading to last-minute changes, incompleteness in the list, and occasionally, costly "active failure." This was frustrating to Facilities and its customers. The Infrastructure, Utilities and Energy Management Group within Facilities attempted to change this.

Key customers and stakeholders participated in a workshop using Lean to develop a shared understanding of whom the list was serving, what the process (and its problems) were, and how to improve things. Together, they created a well-defined process for developing a complete and reliable FIN list with the right amount of detail from customers. Since then, the team has implemented the process, and it's proving to be effective.

Patti Mitchell, associate director of capital programs, says, "The new process has delivered a much more complete FIN list with additional information not previously provided. The new information allows for a thorough review, [done] quickly and completely." By having a stable process that proactively engages customers, the university will avoid liabilities, decrease unscheduled maintenance, and shorten the list, thereby increasing customer satisfaction. Thus far, it has been a successful customer-driven experiment.



UNIVERSITY OF COLORADO Boulder, Colorado Submitted by Curt Huetson, P.E., RPA, FMA, Director of Facilities Planning, Operations and Project Management

HFS CULTURE OF CUSTOMER SERVICE

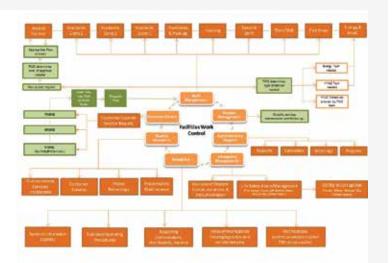
Housing Facilities Services (HFS) is a service organization at the University of Colorado Boulder that is devoted to customer satisfaction. To support this, HFS sends an email survey to customers after each work order is completed to ensure they are satisfied with the work, technicians, and timeliness of the repairs. HFS has a 92 percent satisfaction rate; below are examples of the positive comments from customers:

"Technicians were very timely, identified and fixed the problem quickly, and were very kind. An excellent experience overall."

"Everything is in even better condition than it was before it broke!"

Yet HFS goes the extra step to ensure that all customers are satisfied with their living and/or working areas by personally following up with those customers who did not rate us highly. Supervisors reach out to clarify the concern, if it was addressed, and if not, find a solution. HFS has found that many of these low ratings resulted from the roommate miscommunication, or because the issue had already been resolved after the customer submitted the survey, or from other communication issues. Occasionally, specific feedback also leads to improvements in our service processes.

Customers appreciate our follow-up and are even more satisfied after the follow-up than those customers who rated us highly.



UNIVERSITY OF MIAMI

Miami, Florida

Submitted by Eli Stephan, Senior Manager, Facilities Management and Operations; Dennys Bayona, Supervisor, Facilities and Operations; and Joseph Wright, Project Coordinator

FACILITIES WORK CONTROL IMPROVES CUSTOMER SERVICE

In less than three years, the Facilities Management Department at the University of Miami has transformed itself into a service culture center. Formerly known as Facilities Customer Service, the department's main operations hub rebranded and reorganized itself into Facilities Work Control (FWC) to better reflect the complexity and scope of its mission. Comprising 10 operations representatives, an operations supervisor, a project coordinator, and a senior manager, FWC is a 24-hour, year-round operation that serves as "air-traffic control" for Facilities Management and Operations. It receives and assigns 100,000-plus work orders a year to more than 75 technicians who are distributed across more than 6 million square feet, 239 acres, and approximately 134 buildings on two of UM's three campuses.

Through a better-utilized computer maintenance management system, FWC drives accountability, quality, and reliability as the departmental source for the development of key performance indicators to ensure consistent high-quality service. With service excellence at its core, FWC leverages feedback from our customer satisfaction survey to continuously improve our operations. FWC strives to not only create a service culture, but to define what a service culture is.

UNIVERSITY OF NORTH CAROLINA CHARLOTTE

Charlotte, North Carolina Submitted by Laurie Manderino, PMP, Planning Coordinator, Department of Facilities Management

FACILITIES CONDITIONS CUSTOMER VIEW/CRDM MAP

UNC Charlotte's Facilities Planning office and Facilities Information Systems team has developed a Capital Renewal and Deferred Maintenance (CRDM) website in order to improve the dissemination of construction information to administrators, faculty, staff, and students. This communication tool includes a master list of about 700 university projects—new construction, infrastructure, and repairs and replacements both already funded and awaiting future funding.

The CRDM Map link at *http://facilities.uncc.edu/our-services/business-related-services/facilities-planning/unc-charlotte-facilities-conditions-customer-view* (for best results, use Chrome or Firefox) takes you to the landing page, which provides descriptions, definitions, and detailed instructions. Clicking on the map (on the landing page) allows access to the CRDM map web page, which contains the campus project information. Selecting a building within the map prompts a pop-up with basic building information along with a listing of current or future projects planned for that building (listed at the bottom of the page). The map is not just limited to current buildings; by clicking on the campus landscape, you may also view campus-wide projects that include future buildings and infrastructure improvements.

This information is live data and is being refined and amended as buildings are assessed, new projects are proposed, and projects are completed. The CRDM map allows identification of building conditions at a glance and allows users to "drill down" as much as they like into the details of proposed project information. This work has vastly improved campus understanding of our needs and efforts to maintain our facilities.

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UNIVERSITY OF TENNESSEE

Knoxville, Tennessee

Submitted by Brooke Krempa, Communications Coordinator, Facilities Services



STAR TEAM FOCUSES ON CUSTOMER SERVICE FOR RESEARCH

In keeping with the University of Tennessee's (UT) academic mission, Facilities Services created the Special Team to Assist Research (STAR) as a subunit of its Zone Maintenance unit.

The STAR Team is a specialized team responsible for providing a more focused service function to the research community. This is accomplished by assisting new researchers while renovating their lab space, helping them get acclimated to campus, and installing their lab equipment to ensure they can hit the ground running when they arrive on campus. The team also assists existing research with changing programming requirements and day-to-day problems that may arise, such as issues with the lab's HVAC, electrical, and plumbing.

The STAR Team also takes the lead in developing projects for the Student Environmental Initiative's Green Revolving Fund to conserve energy on campus. The team has identified

several projects with expenditures nearing \$250,000 and savings of more than \$150,000 per year. These savings route back to the fund to allow financing of additional utilities savings projects.

This team is also leading the way to predictive maintenance techniques with vibration analysis, shaft alignment, and thermal analysis on campus to maximize efficiency.

RAPID RESPONSE TO CUSTOMER INITIATIVES

The UT Knoxville Facilities Services Rapid Response Team (RRT) was developed as a specialized subunit that handles overall facilities inspection, quality control, special projects, customer service initiatives, and emergencies. RRT receives work requests from all areas of the UT campus, and has a wide variety of skills in the areas of electrical, plumbing, carpentry, and heavy equipment.

The team organizes and executes Spring Cleanup, a special event held for nine weeks annually as an effort to declutter academic buildings by moving items no longer needed. Staff from RRT work building by building to help simplify the process. Computer and laboratory equipment, furniture, office supplies, paper files, and more can be recycled, discarded, or sent to UT Warehousing. In 2016, 3,312 cubic feet of material was recycled, taken to surplus, or disposed of at the landfill.

The subunit performs whole-building relocations and office relocations. New building moves consist of complete move-in of new equipment, furniture, and supplies into facilities.

RRT is also responsible for setup and teardown of special



events on campus. This includes delivery and setup of tables, chairs, stages, and containers for recycling and waste. During the 2015-16 academic year, more than 700 work requests were performed by RRT.

UNIVERSITY OF VIRGINIA

Charlottesville, Virginia Submitted by Vibha J. Buckingham, Associate Director, Building Services; and Sandra A. Smith, SPHR, Mananger, Quality Assurance + Staff Development

TAKE YOUR CUSTOMER'S PULSE AND IMPROVE YOUR ORGANIZATIONAL HEALTH

Sometimes we're too quick to formally gauge customer satisfaction. Electronic surveys may or may not get customers' attention, and once launched, esurveys take a great deal of time to organize and interpret. Communicating that we care and are making changes to improve can be challenging, particularly when respondents are promised anonymity.

We continue to do biannual electronic surveys where customers give us their candid reviews of our work. But we decided survey-taking needed to have a more personal touch. To make it easier for customers to give us feedback that some consider "bad

news," they use numbers and not words to describe their satisfaction or dissatisfaction.

It works like this: Once a quarter, managers select customers and ask five questions. The responses range from 1 through 5, with 5 being the best.

"Tell us how you feel about...

P=Performance of our management team

U=Understanding your needs

L= Level of cleanliness of your space

S=Staff (front-line) performance

E=Everything else—what else would you like us to know?"

Responses 1, 2, and 3 are less favorable ratings, and we follow up on them to reach customer solutions. Responses 4 and 5 indicate that customers are happy and satisfied. To complete this metric, we



reassess each successive quarter with the goal of finishing the year with at least 85 percent of our responses being 4 or 5. This one-on-one approach gives us another opportunity to have customer conversations, and at the same time, show them that we care about how they feel. In the end, when the numbers don't say "we love your work," we listen carefully.

Taking your customer's PULSE is a prescription for success. Give it a try and see if it doesn't help improve the quality of your organization's health.



TAKE CARE OF YOUR EMPLOYEES FIRST ... AND THEY'LL TAKE CARE OF YOUR CUSTOMERS

This year, we made workplace "happiness" a performance goal. How can we increase workplace satisfaction, add doses of fun, and reduce employee stress? At the same time, our management team wanted to inject some surprises into workdays that can seem mundane and monotonous.

Making satisfaction at work an annual performance goal ups the importance of adding fun to everyone's work day. Every manager will be evaluated on how positive his or her employees feel. Some of the ways that we'll measure success are through brief surveys to help us understand overall changes in mood or increases in productive workplace dialogues.

One important element of the goal is to empower supervisors to include fun in their daily routines. The only ground rules are that all activities must be respectful, legal, and reasonable. The goal is to just do something unique that grabs one's

attention, brings a smile, and overall creates a memorable moment.

We realize that every employee will not look forward to coming to work every day. But what we can realistically expect is that in each corner of our business, there will be more smiles, more solutions, and higher levels of engagement. As an added bonus, we expect an increase in customer satisfaction levels. When employees feel good, the positivity always transfers directly to our customers. (§)

Steve Glazner is APPA's director of knowledge management and editor of Facilities Manager; he can be reached at steve@appa.org.



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!

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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.

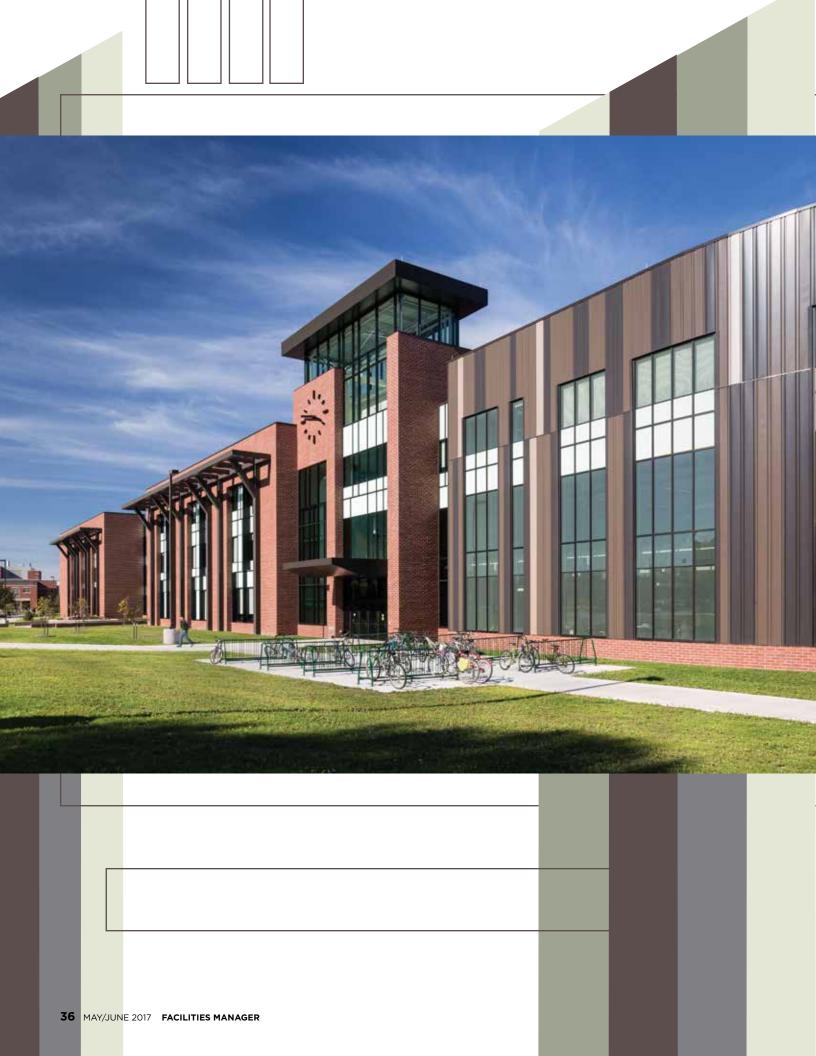
"if you want to know how to be successful at a physical plant in a university environment, you should really make APPA a top priority in your training."

— Jacob Savens, Michigan State University

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By Kathy Richards, P.E., CEFP, and Jim Thams, CEFP

SPACE PLANNING as a Catalyst for Developing a Culture of Change

IN 2011 Northern Michigan University (NMU) embarked on a building renovation project that, through collaboration among the administration, academia, and support departments, saved over \$2.4 million in construction costs, provided annual operational cost avoidance of over \$40,000, and fostered a paradigm shift in course scheduling for the entire campus, changing how instruction is delivered on our campus. This article outlines the evolution of space planning at NMU and how it exponentially improved building efficiency because of the team charged with delivering a new building.



EARLY SPACE PLANNING

Through the years, NMU has been working to improve space management, which for a long time simply meant tracking space using an electronic database. This eventually evolved into a desire to analyze classroom and laboratory use. This idea, coupled with a requirement by the State of Michigan to report on space utilization as part of the capital outlay request process, led NMU to assemble a team representing the facilities department, registrar's office, provost's office, and instructional technology office. Their task was to evaluate, select, and implement a single software solution to handle course scheduling by the registrar's office as well as manage space assignments by the facilities department.

Initial reports on classroom utilization revealed a number of trends that up until then were thought to be true, but lacked the data to substantiate them, such as: 1) The highest utilization rates were between the hours of 10 a.m. and 3 p.m.; 2) early morning, evening, and Friday utilization rates were low; 3) classrooms controlled by individual departments, not available for scheduling by the registrar's office, were utilized far less efficiently; and 4) there were inconsistent scheduling patterns. The first-year reports showed that average classroom utilization between 8 a.m. and 5 p.m. Monday through Friday was just under 45%, with an average seat

a.m. and 5 p.m. Monday through Friday was just under 45%, with an average seat utilization of around 65%. These rates not only demonstrated that NMU had ample classroom capacity to meet both current and future demand, but also suggested that NMU may have had an excess number of classrooms. Under the direction of the university president, the Space Utilization Committee was formed to help analyze space use and make recommendations on ways to improve efficiency. The committee reported to the vice president for finance and administration, and included a broad representation of academic and administrative departments. The formation of this working committee helped foster awareness of classroom utilization and the importance of wise space management.

Early recommendations from the committee focused on who controlled classroom space and when/where classes were scheduled during off-peak hours. In cooperation with the Space Utilization Committee, deans and department heads turned over department-controlled classrooms in poor condition or with low utilization to the registrar's office. In exchange for the department relinquishing control of the space, the rooms were refreshed and the department was given first priority for scheduling that space.

Other recommendations from the committee considered where evening and weekend classes were placed. Course placement guidelines were developed, referred to as "priority" and "consolidating" scheduling, to concentrate weekend and evening classes in select buildings, allowing facilities staff to turn down HVAC and lighting systems in buildings with no classes.





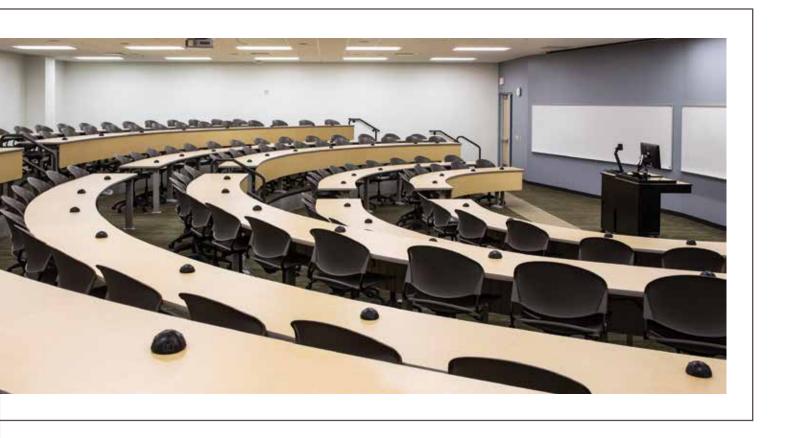
In addition, the registrar's office was provided color-coded floor plans identifying the mechanical zones within each classroom building. These plans would be used to systematically place courses in as few zones as possible within a given building, providing further reduction opportunities by only running the HVAC systems serving occupied zones. These two practices were well accepted by faculty, had little to no impact on course scheduling, and provided real, documented savings.

THE PARADIGM SHIFT

The real change began in 2009 when NMU was awarded approval to proceed with the renovation of its primary classroom building, John X. Jamrich Hall. Completed in 1969, this two-

until 2009 all of the reporting, benchmarking, and recommendations on utilization had been conducted internally and only used to modify course placement.

Building on the campus' ongoing discussion regarding space utilization and the potential this opportunity presented, the university considered it essential that part of the design process include outside experts to evaluate its classroom stock and help determine the right quantity, size, and type of classrooms to be delivered as part of this project. Their first task was to conduct a space study of NMU's entire classroom stock. This project, although focused on a single building, was to look globally at classroom utilization and evaluate the utilization, type, and condition of all NMU classrooms.



story facility was designed primarily for lecture-style instruction. It had large, underutilized tiered lecture halls, lacked many of the amenities of new modern classrooms, and was difficult to adapt to new collaborative/active teaching and learning methods. Despite its shortcomings, the building contained 50% of the university's general use classrooms.

Project planning began with the goal of providing an efficient, state-of-the-art facility that improved academic delivery, maximized building use, and reduced overall operational and maintenance costs—the same space utilization goals the university had been working toward with its existing facilities. However, up The results confirmed prior reports indicating below-average utilization. Average classroom usage for the 2010 fall semester equated to 22 weekly room hours (WRHs), well below the space planning consultant's recommended utilization standards of 28.5 to 31.5 WRHs. The review also indicated that approximately 77% of course offerings had an enrollment of 40 students or less; while 72% of the classrooms had capacities greater than this, reaffirming that many large classrooms and lecture halls were underutilized. These results were shared with the university administration, academic deans, department heads, and faculty. They were presented with the op-



portunity to either rebuild capacity as it currently existed, or through this project, rightsize NMU's capacity to match demand. It was determined to set NMU's standard utilization to a minimum of 28.5 WRH, with the understanding that rightsizing our capacity would result in fewer and smaller classrooms. This in turn would require the development of standard scheduling guidelines that all academic departments would be required to follow.

Collaboratively, the provost's office, registrar's office, and facilities department developed a clear set of policies to standardize scheduled patterns and more equally distribute courses between 8 a.m. and 5 p.m. The rules below were developed, tested, and (with input from department heads) refined prior to implementation.

"The success of this project can be directly attributed to the collaboration and team approach among so many different stakeholders."

SCHEDULING RULES:

- Courses should be offered with MW, TR, MTWR, MTRF, MWRF scheduling patterns.
- Single-day courses should be offered on Fridays or during evenings
- Start courses on the hour (8 a.m., 9 a.m., etc.). 6:30 p.m. is acceptable.
- Fifty-minute courses should be offered from 8 a.m.-5 p.m.
- Evening courses should be offered from 5 p.m. or later. 5:00-5:50 p.m. is OK; the rest should be "blocked."
- Stay away from 5:00-6:40 p.m. for evening courses.
- · Block Scheduling (example: 2-day, 4-credit courses should
- be offered from 8 a.m.-8 p.m.)
- Classes have to be distributed throughout the day, with no more than 10% scheduled at any one hour.

Once design was set for the new building and the rules were developed, there were a number of outreach meetings with the academic departments to reinforce the fact that once the facility was complete, NMU would have fewer general use classrooms than it had before, and so the above rules would be crucial for successful course placement. During the three semesters that the new building was under construction, departments were required to implement the new scheduling rules and were graded each semester on how well they conformed to them. Reports were generated by the facilities department that outlined an academic department's conformance to each rule, then provided to the academic deans, who in turn worked with department heads to review compliance and modify schedules to better conform to the new rules.

Concurrent with the planning associated with classroom utilization, NMU worked to understand what type of classrooms and classroom technology was required to meet current pedagogical needs. To understand this need, faculty were provided the opportunity to take part in a number of on-campus workshops designed to demonstrate active or collaborative teaching techniques. Following these demonstrations, faculty were surveyed and asked what the preferred classroom type was for each class they taught: lecture, seminar, or collaborative learning. This survey data was then compiled with the space utilization data to shape the quantity and type of the classrooms required to meet the academic need. The demonstrated need not only resulted in fewer classrooms, it shifted a large portion of the classroom stock from large, lecture-style auditoriums space to smaller, 30-to-40 seat classrooms that supported active/collaborative learning. One of the unanticipated results of this study was that the new classrooms' demonstrated need could not be efficiently adapted to the existing structure, and because of the difficulties associated with filling the large, underutilized lecture halls, it would be more efficient to build a replacement facility.

THE RESULT

In 2014, NMU completed its \$33.4 million, 133,000-squarefoot, mixed-use academic facility, which has become the most sought-after location on campus for students and faculty alike. It contains 24 high-tech classrooms (8 fewer than the building it replaced); room capacities were designed to match course enrollment; technology and equipment were provided to match instruction styles; and all spaces are highly adaptable to changing technologies and teaching methods. Because of the planning associated with this project and the campus initiative to set a target utilization rate, overall classroom utilization has increased to an average of 63-75% within the new facility between 8 a.m. and 5 p.m. On-campus classrooms have been rightsized to match both quantity and capacity, reducing building square footage, resulting in estimated construction savings of just over \$2.4 million, and providing cost avoidance in annual operational costs of just over \$40,000.

The success of this project can be directly attributed to the collaboration and team approach among so many different stakeholders. Not only did the effort deliver a truly exceptional classroom facility, it fostered a paradigm shift in the way NMU delivers instruction and manages its resources. (§)

Kathy Richards is associate vice president of engineering and planning/facilities at Northern Michigan University in Marquette, MI; she can be reached at *kathrich@nmu.edu*. Jim Thams is NMU's director of facilities/campus planning and can be reached at *jthams@nmu.edu*. This is their first article for *Facilities Manager*.

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The Inevitability of Flammable Refrigerants

By David L. Handwork

he Montreal Protocol, finalized in 1987, was originally adopted for eliminating worldwide production and use of atmospheric ozone-depleting substances. It was successful in eliminating production of several chlorofluorocarbon (CFC) products commonly used in air-conditioning equipment. The success of CFC elimination can be seen in NASA's data on both the ozone layer increasing and the polar ozone hole decreasing in the last decade. The predictions made 30 years ago were not this optimistic for ozone recovery. Consequently the



ozone crisis has faded from the public media and political narratives.

In the late 1990s, the purpose for the Montreal Protocol started shifting from an ozone-layer crisis to the global-warming/climate-change agenda. The list of phased-out substances was modified to include those that may or may not affect the ozone, but were known to contribute to atmospheric greenhouse gases. This shift of application and policy has been a topic of fierce debate. Regardless of debate position, the United States and other world governments have adopted the elimination and phase-out of hydrofluorocarbons (HFCs) and hydrochlorofluorocarbons (HCFCs), all which have high globalwarming potential (GWP). The phase-out dates for HCFCs is certain, but the dates for HFCs in the United States could be subject to further debate and change.

THE CHALLENGE OF REPLACEMENT

The significant challenge with eliminating widely used refrigerants is their replacements. Moderateto-high GWP refrigerants are widely used not only for their superior thermal characteristics, but also for their nonflammability. The alternatives with low GWP are generally flammable, which creates operational safety challenges not currently experienced with HFCs or HCFCs. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is aggressively and ambitiously addressing this safety challenge. With U.S. Department of Energy and industry contributions, ASHRAE is funding and overseeing a \$5.8 million "moon-shot" research project to address safe and effective application of "Low GWP Flammable Refrigerants." This research began in late 2015, with completion planned for this year. The research outcome will provide modifications to ASHRAE Standard 15, "Safety Standard for Refrigeration

Systems," and Standard 31, "Designation and Safety Classification of Refrigerants."

These standards are written in code-friendly language for incorporation or adoption into existing model codes. The intent of the aggressive standards update is low-GWP refrigerant acceptance by federal policymakers and code entities. Adoption and acceptance could rapidly accelerate U.S. phase-out of HFC

products. This includes refrigerants R134a and R4101a, which are very widely used in campus chillers and HVAC equipment.

THE DIRECT IMPACT ON FACILITIES MANAGERS

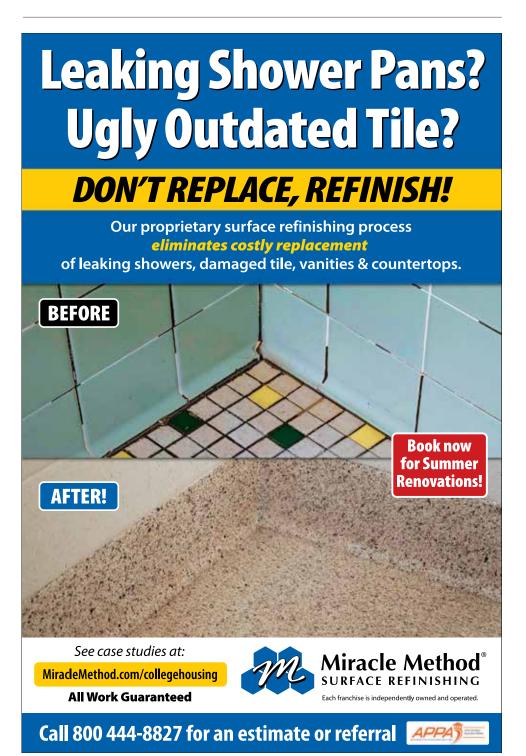
These phase-outs could have significant cost implications for education facilities within the next decade. Facilities managers will need to make strategic decisions on current HVAC equipment replacements with refrigerant products slated for obsolescence. Maintenance-technician training will be required for the regulations and standards coming with new refrigerants such as propane or ammonia. Procurement, storage, and handling of new refrigerants may radically change.

Mechanical rooms housing refrigeration equipment within buildings may require modifications related to safety, including new air monitoring and ventilation. Cost implications for new equipment are unknown. However, it's anticipated that manufacturers will incur significant development costs for new refrigerants that will be passed on to consumers.

Preparation and planning should begin at your facility, with discussion and understanding of this imminent change. To help prepare for the transition that is coming, Underwriters Laboratory hosted a free, four-part "Flammable Refrigerants Webinar Series," and all four sessions were recorded and available for viewing at *www.ul.com.*

The APPA Standards and Codes Council will continue monitoring and membership reporting of refrigeration policy developments. Federal phase-out policy updates are anticipated in 2018. (§)

David Handwork is interim assistant vice chancellor of facilities management at Arkansas State University in Jonesboro, AR. He can be reached at *dhandwork@astate.edu.*



The Three Rs: Recruitment, Retention, Reward

By Randy Culver



ne of APPA's core values is to "elevate the recognition and value of educational facilities and their direct impact of the recruitment and retention of students, faculty, and staff."

Some may think a career in facilities services is all about maintenance, construction, custodial, and grounds, but it's really all about the students. Recruitment and retention of our students is as much our responsibility as anyone in the university, maybe even more. Facilities impact every moment of our students' educational careers.

Recruitment and retention of APPA members is our responsibility as well, not only for our own

professional development, but for the benefit of our universities and ultimately for the benefit of our students. The more engaged students are in their college career, the more successful they will be. Similarly, the more engaged we are as facilities professionals, the more successful we and our universities will be.

Higher education is all about investing in people, our students, who desire something better, something more. APPA is about investing in people, our career professionals, who want to make a difference, have an impact, and enhance the educational experience of our students. APPA and the regional associations are a membership community made up of people who believe that together we can make a positive difference in the facilities services profession and transform the lives of our youngest adults, those students we serve every day on our campuses. Being a member of APPA means you're never alone or on your own. You have an elaborate network of professionals available to answer questions, share their experiences, and assist you with decisions that will make a positive impact on your campus.

The rewards of a college education are infinite. The rewards of APPA membership are unlimited. I can honestly say I have a renewed energy and passion for my profession, my university, and the students, faculty, and staff I serve after participating in APPA events and connecting with my professional peers. Membership in APPA allows you to stay on the leading edge of the facilities discipline, to meet and create life-long friendships with other professionals, and to impact the lives of the faculty, staff, and students at your own campus.

Take the time to make a difference in someone's life. If you're already a member, invite a co-worker from your institution to participate in an APPA event, share a copy of *Facilities Manager* magazine with someone outside of your department, invite a peer from another university to join APPA and attend an event with them. If you're not a member, consider joining our organization. The impact it will make on your life, your career, your university will be unparalleled.

"If your actions inspire others to dream more, learn more, do more and become more, you are a leader." *—John Quincy Adams* (\mathfrak{F})

Randy Culver is director of facilities services at Black Hills State University in Spearfish, SD. He can be reached at *randy.culver@bhsu.edu*. This is his first article for *Facilities Manager*.

Effective and Innovative Practices for the Strategic Facilities Manager

Edited by Jeri Ripley King

This book offers a sampling of tested-in-the-field practices and frameworks that can help educational facilities managers meet the challenges of today, as well as those in the foreseeable future.

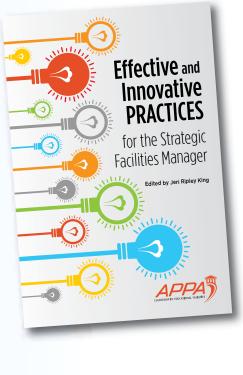
Ever-tightening resources and pressures to work more efficiently and effectively call for a skill set that is able to assess the environment, advance new initiatives that are aligned with institutional goals, and help organizations behave more proactively. Those who can do that, and are able to communicate effectively with their constituencies, are more apt to thrive and help their organizations do the same.

The 16 chapters focus on such topics as:

Strategies

- Information technology
- Customer expectations
- Prioritizing and decision making
- Assessment
- Leadership in the future

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Ten Tips to Stretch Your Fleet Budget

By Bill Dakuras

he versatility of utility vehicles has caught the attention of farmers, hunters, fire crews, search-and-rescue teams, municipalities, and even the National Park Service. Likewise, utility vehicles are routinely used on college campuses for facilities and grounds maintenance, security, quick transport and delivery, snow removal, event support, and many other applications. Their uses range far and wide, and their usefulness in the campus environment cannot be denied.

Compact and customizable with task-oriented accessories, they can increase productivity, stretch your budget, and boost your sustainability footprint if you use electric or more fuel-efficient gasoline vehicles.

If you are considering adding a utility vehicle to your fleet, careful planning, long-term thinking, and the following tips will boost both your hard and soft savings:



1. Avoid makeshift and recreational vehicles.

Neither golf cars with boxes on the back or utility vehicles built for recreational use are designed to tackle many campus applications. To keep your crews on the move, look for vehicles that are specifically engineered and built for work, with long-lasting frames and strong suspension systems.

- 2. Don't let rust destroy your investment. Since water and fertilizers used on campuses can cause rust, vehicles with rustproof, corrosion-resistant aluminum frames and aluminum bed boxes are a more cost-effective option. Steel frames, even when coated, may rust in these environments.
- 3. Boost sustainability and power with advanced engines equipped with electronic fuel injection (EFI). Not all EFI engines are the same. Some single-cylinder overhead valve engines with EFI are poorly designed, producing less power, torque, and fuel efficiency. In comparison, a single-cylinder overhead cam engine with EFI can deliver twice the miles per gallon, boost hill-climbing power and torque, and reduce maintenance costs.

4. Reduce travel time and costs with 500-amp controllers. Many electric vehicles have 350- or 400-amp controllers, so they don't carry or tow as much weight as those with more powerful controllers. They also may stall on hills or long runs, causing downtime.

A midsize vehicle with a 400-amp controller and 48-volt battery pack has a bed load and towing capacity of just 600 lbs. (272 kg). A comparable vehicle with a 48-volt battery pack but a 500-amp controller delivers a bed-load capacity of 800 lbs. (362.8 kg), 200 lbs. more than the first vehicle.

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onboard chargers with reel retractors. Smart solid-state chargers tell you when the car is plugged in and receiving power, and issue stateof-charge alerts that prevent dead cars, increasing uptime. Onboard chargers and reel cord retractors let your crews charge their cars during lunch breaks and other free time, rather than having to return to the car shed. Charging batteries more often and before they deep cycle also improves battery life.

5. Prevent lost time on electric cars with smart.

6. Boost productivity with task-oriented acces-

sories. The right accessories can also save time and money. Look for a vendor with a wide range of commercial accessories like strobe lights, stake sides, ladder racks, van and tool boxes, dump kits, integrated cabs, and limited slip differentials that allow two-wheel drive vehicles to perform almost like 4x4s.

Juan Zamora at St. Thomas University learned the value of commercial accessories when he equipped his utility vehicles with a configurable, removable, track-based bed attachment system.

"The attachment system let us carry everything we need. Now we're not always running back and forth to the shop. The system reduces round trips, keeps crews in the field, and protects our equipment because we're not throwing things on top of gear in the bed," says Zamora.

Other universities create dedicated vehicles for painting, delivery, housekeeping, and other tasks.

7. Enjoy major savings by eliminating full-size

vehicles. Replacing full-size vehicles with utility task vehicles (UTVs) can save thousands of dollars per vehicle.

Georgia College and State University was considering using vans and shuttle buses to provide free security escorts and rides across campus during night hours, but opted for customized utility vehicles instead.

"The UTVs were much less expensive to purchase, operate, and insure than vans or shuttle buses would have been," says Chief Mechanic Charles Gettis. "They require no fuel and less maintenance and let us put fewer miles on our public safety cars."

8. Consider tax-exempt municipal leasing. While many commercial buyers are leasing their fleets, public colleges and universities still generally purchase their vehicles because of budgetary and organizational restraints. Many don't realize they are eligible for another alternative called "tax-exempt municipal leasing." Ask your sales professional how this may lower your monthly payments—sometimes considerably—and cut your overall fleet costs.

9. Cut red tape and reduce costs with a government purchasing cooperative. Look for a vendor affiliated with a government purchasing cooperative. This guarantees best government pricing, eliminates the bid process, and simplifies the purchase.

"When we leased our last vehicles," says Carol Schnitzer, director of purchasing at Skidmore College, "we saved \$2,940 on four gasoline utility vehicles when compared with our previous pricing."

10. Work with a single vendor and develop a comprehensive transportation strategy. Working with a single vendor can help you preempt problems and costs in the years ahead. It standardizes maintenance schedules, warranties, parts inventory, safety training, charging, and more.

"In the past, we purchased cars as needed from various vendors," says St. Thomas University's Zamora. "But after working with a single vendor who designed a strategic transportation plan for us, we have cut our maintenance costs and downtime considerably and stabilized our monthly transportation budget. Working with a single vendor is the way to go."

To be sure, the quality and performance of utility vehicles range far and wide, so don't shop by price alone—compare the features, benefits, and warranties of various brands and models.

Most importantly, consider firms that understand the campus environment and can help you choose the best vehicle options for *your* specialized and individual needs. (3)

Bill Dakuras is global director of sales and business development at Club Car in Augusta, GA. He can be reached at *bill_dakuras@clubcar.com*. This is his first article for *Facilities Manager*.

Today's World is Volatile, Unpredictable, Complex, and Ambiguous (Why You Should Get Your CEFP Certification)

By John R. Ferris, MBA, CEM, CEFP, LEED AP

have been asked many times, "Why should I get a Certified Educational Facilities Professional designation?" I have heard this from people who have been in the industry for several years, seasoned directors and individuals who know they will be retiring in a year or two. The question is a good one. It should be asked. There is not enough time to pursue every training or accreditation opportunity that comes our way. So, we make choices.

Before I give reasons as to why you should get a CEFP, let me give a little context:

Some of you reading this, like me, have over 30 years in this industry we call "facilities management"



(FM). When we started, computers were a novelty. There was no Americans with Disabilities Act. Energy conservation was less of an issue than it was 10 years earlier. Very few states had any mandates concerning waste-disposal reduction. The Internet was predominately used by university professors. Most phones were connected with coil wire, and the new cellphones weighed as much as a brick. Technological change was happening, but plant equipment was still as familiar in operation and maintenance as the equipment it was replacing. You could still distinguish yourself by getting an undergraduate degree—and that degree did not saddle you with years of high debt.

NEW DRIVERS AND CHALLENGES

But after three decades, things are a little different. Computers are no longer a novelty. A large proportion of the world's population have more computing power in their pocket than NASA used to put a man on the moon. The challenges of accessibility are everywhere for those with older buildings. Issues of sustainability now drive student populations; they want to ensure that their campus is not only environmentally conscious, but is spending at least some of its money to improve the planet.

The Internet is now the "IoT" (Internet of Things), which is connected to over 10 billion devices—and that is only 1 percent of its capability. Communication is immediate, whether through a cellphone, watch phone, Snapchat, Twitter, Facebook, etc. Technological change is happening so fast that different skill sets are required with new equipment installations. Finally, undergraduate degrees are so commonplace that graduate degrees are often required in the workplace.

If you got the idea that today's environment is more volatile, unpredictable, complex, and ambiguous than ever, then you understand what I am trying to say. This is the context I wish people to understand when I explain why they should get their EFP/CEFP certification. As promised, here are some answers as to why you should get a CEFP:

Q: Why should I get a certification when I already have a degree?

A: A certification is as valuable as a college degree. One reflects knowledge; the other competency. One proves you know it; the other proves you can do it.

Q: Why should I get a certification when I plan on retiring in a few years?

A: As a leader in the industry, you have invested a significant portion of your life in this field. You have made lasting improvements in many areas. People look up to you with respect and look to you to show the way.

I can think of no better lasting legacy than to know you have inspired others to reach for higher heights that will often lead them to more enriching lives. In this case, by inspiring others to get the certification,

not only are you helping them to enrich their lives and preserve what they have achieved in their workplaces, but you are also raising the level of competency for the entire industry.

Q: I am new in this field; why should I get an EFP?

A: What better way to understand the complex world you have just entered? During our careers, we gradually acquired bits and pieces of knowledge, and our understanding of the world of FM grew over time. The EFP highlights all the areas under FM and gives you a clue as to how everything works as a whole.

Q: I have a degree and a lot of experience. Why should I get a certification? A: This question challenges me the most. While it is known that certification can help distinguish you from the crowd when you are doing a job search, if you plan to stay where you are and are professionally seasoned, why would you do it? Two reasons: professional development and personal challenge. Professional development, in that study allows you to sharpen the edge you learned through FranklinCovey. Personal challenge is always needed for personal growth and self-empowerment.

Finally, let me say that to date, APPA has granted 508 CEFPs and 462 EFPs. While all of those professionals had the same question as to why they should get certified, they all answered by saying, "OK, I'll do it." Your region has made a great investment into its membership by giving steep discounts on the cost of acquiring the EFP/CEFP. It's an online program that has been developed and refined to make your experience in pursuing certification both productive and enjoyable. Hopefully, you will change your "why?" to "why not?" (\$)

John Ferris is director, facilities services at San Diego State University in San Diego, CA. He can be reached at *jferris@mail.sdsu.edu*. This is his first article for *Facilities Manager*.

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SI NEW TORY TIMES RESTRELLT

Hillbilly Elegy

Culture in Critit

L.D. VANCE

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

t's the new fiscal year for many of you, and you're probably wondering how you'll manage another year of high service demands after the budget cuts you've been allocated. Never fear, the resources reviewed here are free, yet valuable.

HILLBILLY ELEGY: A MEMOIR OF A FAMILY AND CULTURE IN CRISIS

J. D. Vance, Harper Collins, 2016, 264 pp.

As facility officers, we are squeezed between the needs of the physical campus, leading to deferred maintenance—and the needs of the students who choose a campus, based on its appearance (i.e., the condition of campus facilities)—as well as price. We all know that you get what you pay for, but still there is a reluctance to spend money on things that don't

have immediate, tangible benefits.

After years of advocating for additional education, colleges and universities are seeing considerable pushback and conflicted opinions. The value of additional education is demonstrated repeatedly, but usually only for those for whom the education was delivered under the right circumstances. That is, the student was predisposed to additional learning or to the type that was provided.

> A memoir of J. D. Vance's first 25plus years is presented as an example of the challenges facing our society. *Hillbilly Elegy* is only a snapshot, but it's also a compelling story and reflection on the problems facing more and more people. A larger, more in-depth study was conducted by a controversial author, Charles Murray, in his book *Coming Apart* in 2012. In *Hillbilly*

Elegy, Vance presents his personal struggle and the struggle of family members to make it in our rapidly changing society.

The pressures of family, community, region, and the nation are laid out in a touching story of strong and weak family members affecting the life of a young man. While the story ends with a very successful situation, the route Vance took to get there was far from encouraging. A substance-addicted mother, a strong-willed grandmother (with a salty tongue), and no reliable father figure (he recalled 15 different men assuming the role before he reached adulthood) predicted a bad end, not because it was inevitable but because it was the normal outcome of this scenario.

Details beyond this are left for you to read. It's a touching departure from the normal material covered in this column, but it contains some perspectives we often ignore. Is there hope for the working class referenced in the memoir via the industry many of us support? It is likely. However, that requires taking on a completely different mindset, finding where our "cheese" got moved to, and tackling the problems we have now rather than the ones we wish we had.

The takeaway from *Hillbilly Elegy* is to keep struggling, maintain our commitments to family and fundamental goodness, and find new solutions to the new problems we are facing.

BUSINESS DEVELOPMENT FOR PROFESSIONALS

William C. Johnson, CreateSpace, 2010, 120 pp., hardcover, softcover, e-book, from \$11.99.

In C. JOHNSON

Business

Development

Professionals

Several books that have been reviewed in this column appear to be for practitioners only, and outside the purview of most facility officers who are on the owner's

side of the business. However, those books—and this one—are important components of an owner-practitioner's library, because they introduce concepts that are not typically addressed within the organization. Understanding and knowing how a professional develops business relationships and actual business is important even if one is on the acquisition side of the equation.

First, what is a good professional attempting to accomplish through business development? Certainly, it may be a new project for the company. That is the shallow approach that many organization and state rules assume, and attempt to develop regulations against. But as Johnson points out several times in *Business Development for Professionals*, business development is a combination of attitude and relationship; these are both traits that owner-professionals must develop to deal with internal customers as well as external providers. Imagine how difficult daily business would be if we didn't develop appropriate listening, synthesizing, and empathetic response skills. We would be little better than a toll taker on a bridge, performing a transaction irrespective of the driver's needs or concerns.

At the same time, a successful business development professional is one who identifies the skills and resources required to address the client's described challenges. We must do this on a regular basis as part of our customer-service function. Our call center may be handling thousands of calls each day. But we must listen carefully, respond effectively, and provide assurance that appropriate resources will be assembled to address each caller's concerns. The only difference between us and any other service-oriented business is that the caller may be "captured" and required to use our facility services rather than having an option to acquire the services from someone else.

In short, as a service provider to an organization, we must always be about business development even when the business is required to flow our way. Avoiding or ignoring business development (or preservation) most certainly leads to losing business. For this reason, *Business Development for Professionals* is a must read. It's light, easy, fast-paced, and full of practical information to help an otherwise hard-nosed technical person smooth out the rough edges and make connections at work that invariably result in better customer/client/stakeholder relations. (s)

Ted Weidner is an associate professor at Purdue University and consults on facilities management issues primarily for educational organizations. He can be reached at *tjweidne@purdue.edu*. If you would like to write a book review, please contact Ted directly.



If you would like to write a book review, please contact Ted Weidner at *tiweidne@purdue.edu*.





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 Associate Director of Professional Development, Corey Newman at corey@appa.org.

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products

Compiled by Gerry Van Treeck

VERTI-LIFT introduces a heavyduty transfer cart that quickly and ergonomically moves pallets and other heavy components (up to 4,000lb. capacity) within production environments. This custom-designed solution includes a gravity roller conveyor, a pallet retaining bar to secure the load during transport, and a manual, foot-actuated "locking/docking arm" for convenient hands-free operation. The cart is fitted

with heavy-duty swivel casters that allow movement in all directions, to easily maneuver it into proper position and help it stand up to heavy loads. A hitch-and-pin arrangement for towing is included so that multiple units can be used together. This cart technology is ideal for moving wood, plastic, and aluminum pallets, as well as shipping containers, equipment skids, component frames and bases, production equipment, and more. For more information visit Verti-Lift at *www.verti-lift.com*.

PARIS SITE FURNISHINGS presents bike-shaped bike racks that provide a unique, functional, and fun area for riders to se-

cure their bicycles. Available in male and female designs, each durable, tubular steel rack has a two-bike capacity. Riders can choose in-ground or surface-mount configurations, in hot-dipped galvanized or polyester powder coating in a wide variety of standard colors (custom also available). These unique bike



racks are ideal for schools and universities, parks and recreational facilities, urban areas and streetscapes, green spaces, sports venues, transit facilities, retail and corporate settings, or wherever bike travel is common. Paris Site Furnishings also manufactures a broad line of bike racks including those in pedestal, m-style, coil, horseshoe, loop, ground loop, grid, and traditional designs. For greater detail on all Paris Site Furnishings products visit *www.peml.com*.

RPS AMERICA, INC., announces the Master HP UL, a threephase uninterruptible power supply (UPS) for mission-critical 65-500 kVA applications. This UL(R)listed UPS is manufactured entirely with IGBT and digital-signal processing and features online double-conversion

technology for maximum power supply protection and power quality with a clean sine-wave output. These

480 VAC, 60-Hz units ensure maximum protection and meet VFI SS 111 classification (voltage and frequency independent) in accordance with IEC EN 62040-3. Master HP UL units can be operated in parallel or single-module configuration for redundancy, making them ideal for a wide range of mission-critical applications such as data centers, automation, broadcast environments, critical communications and telecommunications, hospitals/medical facilities, and schools, as well as commercial facilities where a high level of available power and power quality are essential. For

> more information on RPS America, Inc. products visit *www.rielloupsamerica.com*.

AWAY WITH GEESE gets rid of geese in public spaces. The Industrial Unit from Away With Geese is guaranteed to repel Canada Geese from public lawns and athletic fields. The units are theft-deterrent and feature a solar-powered flashing LED light that works at night to disturb geese's sleep, causing them

to find another habitat. Like the Water and Roof Units, they are satisfaction guaranteed, cost-effective, and maintenance free. For additional information on Away With Geese call 513-941-6730, or visit *www.awaywithgeese.com* for a FREE placement study of your property.







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announces the release of the new, fully redesigned patent-pending Test-Tite® Pressure Relief Pneumatic Test Plug. Test-Tite's PR plugs are manufactured with a

one-piece rubber body that contains no seams or bonded parts and a patent-pending pressure-relieving system that is integrated into a glass-filled nylon core for protection and extra rigidity in the field. Functionally, the PR plugs accept air pressure via a pump and are designed to relieve any excess pressure before the plug is permanently deformed or reaches its failure point. Excess air is released into the atmosphere and not into the test area. The compact design allows for testing in horizontal or vertical applications, including instances where the plug must be positioned past a right angle, such as a cleanout tee. For more information on IPS Corporation products go to *www.ipscorp.com*.

PITTSBURGH CORNING introduces PITTCOTE 16 coating, a new low-temperature anti-abrasive (LTAA) product that is ideal for application to FOAMGLAS insulation blocks, curved pipe segments (PSG), half pipe shells (PSH), and fitting covers. PITTCOTE 16 LTAA coating is a water-based, rubberized latex



resin that provides a durable bore coating to insulation substrates and reduces abrasion from vibrating piping or equipment. Due to its quick-drying and brush/spray application capabilities, the product also reduces production time and maximizes efficiency. The coating can be used on a wide range of service temperatures, from cold

and cryogenic equipment to above ambient (120°C), allowing for reduced inventory requirements. For more information on Pittsburgh Corning visit *www.pghcorning.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, email Gerry Van Treeck at *gvtgvt@earthlink.net*.

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