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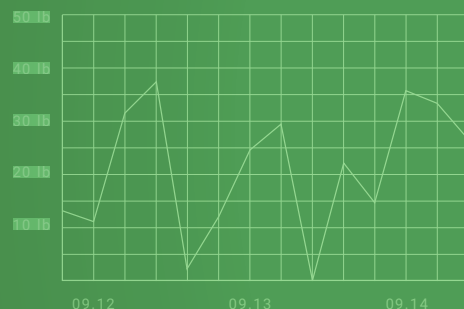
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RECEPTACLE ID	HARDWARE	MIN TEMP
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SD-42	V. 1.14	09/14/18 08:14



MEASURED WEIGHT

WEIGHT HISTORY

09/12/18 00:00 – 13 lb	09/13/18 02:04 – 28 lb
09/12/18 03:27 – 17 lb	09/13/18 06:38 – 35 lb
09/12/18 07:43 – 15 lb	09/13/18 11:19 – 33 lb
09/12/18 13:16 – 43 lb	09/13/18 17:55 – 3 lb
09/12/18 19:08 – 9 lb	09/13/18 22:31 – 28 lb



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By Steven D. Gilsdorf, CEFP

While cleaning is important to the health and safety of the campus and its occupants, a custodian's interactions with students can truly impact their success. By providing additional awareness training and some basic personal interaction skills, custodians can be better prepared to engage a student population that needs mentoring, role modeling, and emotional support.

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By Jerome Roberson, Ph.D.

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By Jon F. Lindberg, P.E., RRC, and Kelsey McMenemy, P.E., CDT

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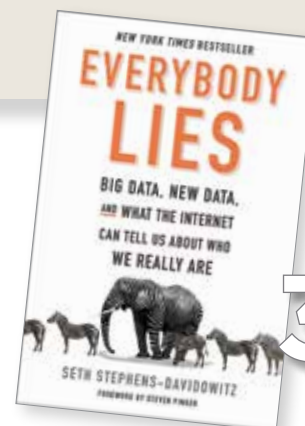
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Going Digital

This edition of *Facilities Manager* magazine, November/December 2018, marks the final issue to be published in print form. Beginning with the January/February 2019 issue, *Facilities Manager* will be published and accessible exclusively online in digital formats.

APPA's new Strategic Plan, published online at www.appa.org and in print in the September/October issue, lays out a bold assessment and realignment of APPA's programs, products, and services. The plan provides a framework that will guide APPA as we sharpen our focus on continuous learning and networking/community building, strengthening our core, and building organizational capacity to meet our members' evolving needs.

Our readership survey and larger member survey, both conducted earlier in 2018, indicated that while there is value in having a print version of the magazine—of which APPA has published close to 200 issues—many members are increasingly getting their information and professional content through digital sources. These include the mobile-friendly “flip file” version of the magazine that APPA has published since 2003, as well as an online reference library of every article published in *Facilities Manager* since its first publication in 1985.

Beginning in the new year, every one of APPA's 18,000+ members will receive brief summaries of each new issue of *FM* and direct links to the full-text articles, available at your time and place of choice for reading and research.

It is important to note that in our move to eliminate the print version of the magazine, we are retaining the quality design, layout, and content that has made *Facilities Manager* one of your top consistent sources on information and topics related to educational facilities. We will be able to provide you with even more quality content and get it to you quicker.

Following are the general themes and topics planned for the 2019 issues of *Facilities Manager*. If you would like to share a case study or longer article on any of these topics, please contact me at steve@appa.org to discuss. Managing Editor Anita Dosik and I are looking forward to continuing to provide you with an excellent resource as you serve your educational institutions.

Jan/Feb 2019: Community College Focus
Mar/Apr: Campus Sustainability
May/Jun: Med-Ed Facilities
Jul/Aug: FM Technologies
Sep/Oct: Modernizing Aging Infrastructure
Nov/Dec: Effective Space Management ☹

COMING IN JAN/FEB 2019

- Community college profiles
- Synthetic turf fields

FACILITIES manager

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About APPA

APPA promotes leadership in educational facilities for professionals seeking to build their careers, transform their institutions, and elevate the value and recognition of facilities in education. 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 20,000 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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facilities digest

By Anita Dosik

industry news & events



2018 Thought Leaders Series: *The Landscape, Framework, and Strategies for Managing & Mitigating Risk*

The 2018 Thought Leaders report, *The Landscape, Framework, and Strategies for Managing & Mitigating Risk*, looks at enterprise risk management (ERM) from both a campus-wide and a facilities perspective, showing how risks affect the facilities organization in its support of the institution. In assessing all types of risks to the institution—strategic, financial, operational, compliance, and reputational—the Thought Leaders symposium participants identify six major risk areas that must be considered for their campuses:

- Revenue and investments
- Brand and reputation
- Health and safety
- Innovation
- Facilities
- Changing political/cultural environment

All Thought Leaders reports are free, thanks to the generosity of sponsors Jacobs and Johnson Controls, and may be downloaded from the APPA Bookstore or at www.appa.org/Research/CFaR/tls.cfm.

Become an APPA Officer: Nominations for 2019 Now Open

Strong and steady volunteer leadership is one of the core forces making APPA the association of choice for educational facilities professionals. Consider becoming a candidate for an elected APPA office. Elected officers gain valuable leadership skills and a chance to develop professionally in many meaningful ways, and being an officer provides a major opportunity to give back to the entire profession. There are five elected officer leadership positions, only one of which will be on the 2019 ballot:

President-Elect

Consider nominating yourself—or others—for the President-Elect position. To learn more, visit the APPA website. All applications and nominations for APPA office are due no later than **December 10, 2018**.

APPA's New Continuous Learning Series

APPA's new Continuous Learning Series is designed to provide the life-long learning needed to address the myriad of challenges facilities professionals face in this fast paced age of accelerations.

Delivered on a wide range of topics, and across a number platforms and mediums, these one- and three-day workshops provide just the right amount of information, training, and peer-to-peer learning to help you stay ahead at your institution.

Be sure to check the APPA website for the latest programming, or email us with any questions at education@appa.org.



CONTINUOUS LEARNING SERIES



APPAINfo is Your Networking Link

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APPAINfo is an email discussion listserv for educational facilities professionals, where you can find the answers to many of your everyday problems simply by posting a question to your peers. What CMMS are you using, and why? How can you creatively deal with customer service issues? What strategies are you using to tell the facilities story to your senior campus administrators? The possible discussion topics are endless. Just ask!

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For more information, contact Steve Glazner at steve@appa.org or simply visit <http://www.appa.org/discussionlists/index.cfm> to subscribe.

CALENDAR OF EVENTS

APPA Events

Nov 30, 2018

APPA Awards Application Deadline

Dec 10, 2018

APPA Officer Election Applications Deadline

Dec 17, 2018

Deadline for FPI and KFM Surveys

Jan 13-17, 2019

Institute for Facilities Management and Leadership Academy
Fort Worth, TX

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



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What Does "APPA" Stand For?

As you can see from the list below, APPA has had several names over its 104-year history.

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 - Leadership in Educational Facilities



Experiencing a Space Management Department Start-Up

By Kimberly Case-Nichols



When it comes to managing educational institutions, we inevitably share the challenges of space management and the nuances of how to deal with limited and inefficient use of space in our buildings. It is no surprise that space is one of the most expensive and valuable resources on our campuses. For this reason, our space management departments exist to ensure that fiscal responsibility is maintained, efficient and effective space practices are adhered to, and space utilization is managed and reported properly. For a space management program to be successful, its master plan must be aligned with the institution's mission and vision, and must have consistent executive sponsors to support and communicate the ever-changing landscape of the campus's physical space.

When it comes to space management—or any issue—APPA is an excellent resource to help us connect with our peer institutions and

share experiences so we can learn from each other and work together on meeting the challenges of facilities management. As an APPA member for the past 12 years, I strongly value the networking and training resources that have helped me develop as a professional and allowed me to contribute my knowledge and experience to this amazing organization.

In my role as director of space management at the University of Nevada Las Vegas (UNLV), I had the unique opportunity to develop and implement the Space Management department, providing shared services to both the UNLV School of Medicine and UNLV Medicine Faculty Practice Plan. UNLV determined these new entities should have their own space and facilities departments apart from the main campus units, and I was hired to build the department from the ground up.

Both the college and practice plan teaching clinics began operation on July 1, 2017. The Faculty Practice Plan was an existing practice that UNLV Medicine absorbed. One of the concerning issues during this transition was that all 17 facilities involved were leased properties and did not come with complete floor plans, space assignments, or any infrastructure for a space management system. Additional challenges included no budget for a space management database as well as the mass onboarding and offboarding of staff in the first 12 months with no categorized space inventory.

As head of a new department, I had only one staff person to support facilities operation and space move logistics. The first 12 months saw explosive growth: The medical school and practice plan staff quickly grew to about 1,000 people, and in just that year alone, our personnel grew to one-third of the 3,000 staff on the main campus. Thus, the need to get a space management system in place was critical to

managing operations and maintaining productivity. In response, I developed collaborative relationships across campus service departments to build on existing systems, policies, and processes.

WORKPLACE CHANGE

During this transition, I quickly learned the peaks and valleys of workplace change management and the rooted emotional connection people have with their physical work space. Resistance and vulnerability were exposed among the workforce at many levels and could not be ignored. Priorities needed to be established quickly to get a handle on determining who the key decision makers were and ensuring that our space management principles aligned with the institution's mission and vision. The desired outcome was to create a "new normal" by determining the planned changes and observing how well staff, students, and patients adjusted to the new workplace environment. Changing the culture around space in the workplace was going to take some patience and finesse; therefore, thoughtful business strategies were needed to create a tactical business plan that would develop the department. I have outlined these strategies below.

FIRST-YEAR STRATEGIES AND ACTIONS

Identify who is involved

- Determine who the key players are in making decisions about space and define their roles.
- Partner with main campus departments including Space Management, Real Estate, and Planning and Construction.
- Create central governance and authority over space data.
- Develop a space committee to preside over space management program development.
- Assign space proxies from each department.

Identify key resources and department organizational needs

- Determine if there is a budget for space activities and funding models for renovations.
- Identify existing institutional resources that can be leveraged to support a brand-new department.
- Determine when reporting timelines are and what requirements need to be met.
- Determine what human resources are required to meet the demands of the department.

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Policies, procedures, and guiding principles

- Redefine the institution's thought process on space as a "shared resource."
- Develop guiding principles, policies, and procedures.
- Develop space request forms and processes to submit, review, and approve/deny space requests.
- Define space initiatives: space request versus project request.

Determine if there a business case for space change

- Take inventory of all space and associated costs to help decision-makers plan.
- Develop a common vision that supports equitable space management for both the medical school and the practice plan.
- Understand what the short- and long-term strategic plans are for the growing organization.
- Understand the drivers for change and develop the space plan roadmap over one to five years.

Manage space change


- Assess the culture of existing space use.
- Develop a transitional approach to support positive culture change.
- Develop metrics to collect data, measure progress, and expose gaps in the operation.
- Communicate and create a format for user input and collaborative discussion across departments.

FIRST-YEAR SUCCESS

There is no doubt that this first year of developing a new department has been exciting and challenging as well as an incredible career opportunity. Our Space Management shared services consolidated resources to serve medical education, clinical practice, and research. The department has been able to make significant progress developing under the strategies outlined above.

I relied heavily on strategizing these building blocks based on the respective needs of our business organization. I realized that while there are many books and how-to articles available about the

fundamentals of space management, there is no magic solution or one-size-fits-all approach for managing space or facilities operations. Nevertheless, there is one asset I could not have done without: I found that it was pivotal to reach out to APPA and find peers and resources to support this endeavor.

There were several moments when I felt like the challenges of building a new department were simply too great. But the benefits of having APPA resources at my disposal assured me that my struggles were not unique and that my tactical plan to create a successful space management department was attainable. Our industry managers and leaders continuously provide a wealth of information and training to support managing our ever-changing physical spaces on campus—and any other issues we may face. 

Kimberly Case-Nichols is director of space management at UNLV School of Medicine in Las Vegas, NV. She can be reached at kim.case@unlv.edu. This is her first article for *Facilities Manager*.

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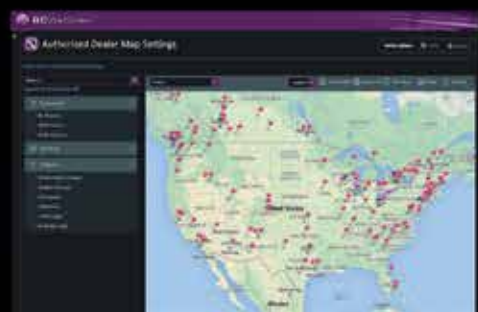
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The **Custodian's** in **Student**





Role Success



By Steven D. Gilsdorf, CEFP

I'm going to reveal a secret that many people don't know about. Yet, once some thought is given to that secret, it becomes readily accepted. Ready? Here it is: "Custodians have a key role to play in student success." There it is. That's it. That's the secret.

Cleaning is important to the health and safety of the campus and its occupants. That's no surprise. The real secret, though, is the custodian's interactions with students. Those interactions can truly impact how a student succeeds.

OVERLOOKED AND UNDERVALUED

I will admit to having some bias toward custodians and custodial work. I've been involved with cleaning for the majority of my 18 years in facilities management. That has allowed me to see the complexities of custodial work. I have come to appreciate many of the varied nuances that not everyone else does. From my personal observation and research, I've concluded that some of the key impacts made by custodians are overlooked and undervalued by the general campus community.

Let's begin with the general responsibilities of the custodian. A commonly accepted definition of a custodian is "one who cleans and maintains a building." The impact of cleaning related to recruitment and retention has been established, especially by Campbell & Bigger's article, "Cleanliness and Learning in Higher Education" (*Facilities Manager*, July/August 2008). There are additional studies that correlate cleaning to attendance, morale, and performance of building occupants (all citations are listed at the end of the article), including "The Smell of Virtue: Clean Scents Promote Reciprocity and Charity" (Liljenquist, Zhong, & Galinsky, 2010) and "Broken Windows: The Police and Neighborhood Safety" (Wilson & Kelling, 1982). Appreciating cleaning's significance within the higher education environment can help cement the recognition of the importance of the custodian's role for the greater university. Cleaning for health and safety are obvious and key parts of the custodial role where it relates to student success.

Custodians have a unique place and position to assist in student success. This is seen in another element of their role, that of "steward" or "caretaker." The custodian works in every place and sees every face on campus, in the classrooms and hallways of academic buildings and in the living and lounging areas of the residence halls. Often, custodians see where students are more vulnerable, open to, and possibly in need of influence. It is the custodian's special role that allows them to be



overlooked—as well as placing them in a unique position to help students in need.

I had an opportunity to complete some research on the role of the custodian. The goal of the research was to identify and highlight those custodian behaviors that positively impact student success. Here is the focus of that research:

Problem

The role of custodial personnel is often overlooked and undervalued in the equation for student success.

Purpose

Identify behaviors of custodial personnel that have a potential positive impact on student success. What role behaviors are presented by custodial personnel that impact student success in university settings?

Sisu can be seen as the custodian's "internal guidance system," which motivates them to perform quality work and to persevere through the "purgatorial" monotony of cleaning the same space day after day while remaining upbeat about their service.

cleaning tasks that are formally performed and provide more direct support for student success. The research revealed that these duties, while important to the student, can reduce the self-esteem of the cleaner—there is a perceived social stigma from others around campus. Often, cleaning is viewed as beneath the stature of others and can be perceived as menial. This perception is reinforced by the challenging work that custodians perform and by the transient nature of the workers themselves (Ayllon, 2013).

One study of university custodians was able to identify the fear and despair custodians feel while performing their work (Magolda & Delman, 2014). The report shared how institutional policies shape and sometimes force custodians into roles that separate them from the rest

CHANGING PERCEPTIONS: CUSTODIANS ARE MUCH MORE THAN CLEANERS

My study added to the research that broadens the understanding of the custodian role within the higher education setting; it set out to complement the research that identifies nontypical role behaviors (beyond cleaning) performed by custodians that impact student success. By identifying and validating those behaviors, the hope is that the custodian's perceived role can change, and therefore receive heightened recognition by others within the university setting. By identifying those behaviors, appropriate training and professional development can be provided to boost the impact custodians are already having on student success.

The literature turned up in my research revealed few studies that looked specifically at the role of the custodian, with even fewer that looked at the person of the cleaner specifically. A small number of studies did include custodians within the greater blue-collar description.

One qualitative study stood out, which focused on and identified impactful custodial behaviors as it investigated custodian–student interactions within a student housing setting (Reed, 2015). My study expanded on Reed's by taking the research to other areas of campus to determine the results of interactions between university students and custodians; those areas are the classroom buildings and collegiate athletic buildings that custodians maintain.

Reed's study identified two different categories of duties that positively impact students: duties that are institutionally assigned and duties as assumed by the employee.

DUTIES ASSIGNED: SOCIAL STIGMA

The institutionally assigned duties are those normally associated with the custodian role. Those duties include the

of the campus community and also fuel injustice. The study states that the increase of "business" practices in university settings has discouraged custodians' courageous acts, amplified "caste" (class) differences, and made it harder for custodians to cross subculture borders. This focus on business practices negatively impacts university custodians by repeatedly pushing them aside. Often, such efforts to improve efficiency and effectiveness interfere with a university's economic justice and equity goals, particularly toward undervalued, overlooked custodians.

The studies I examined emphasized the custodian's perceived role in the campus community. Those perceived-role traits of a custodian include being ignored, overlooked, and having limited engagement and contact with others unless there is a business need to reach out (Lucas & Buzzanell, 2014). My study validated and confirmed the role of the custodian as perceived by the students, faculty, and staff as being overlooked. Nevertheless, other studies showed that blue-collar work, including custodial, adds to and improves upon the overall performance of an organization (Lucas & Buzzanell, 2014). This study also introduced the concept of *Sisu*.

Sisu is a Finnish term defined as stoic and persistent determination, resilience, and the resolve to continue and overcome in the face of adversity. *Sisu* is a combination of "stamina, perseverance, courage, and determination held in reserve for hard times"—in other words, good old-fashioned "grit." Perhaps due to my career in and around custodial and cleaning, I find such this an accurate term for describing a custodian. *Sisu* can be seen as the custodian's "internal guidance system," which motivates them to perform quality work and to persevere through the "purgatorial" monotony of cleaning the same space day after day while remaining upbeat about their service.

DUTIES ASSUMED: MENTORING AND SUPPORTING

Returning to Reed's study, the second category of duties he identifies—those assumed by employees—are another area where they have an impact on student success. These duties can be broken down further into two types of employee-assumed behavior. The first type is mentoring, and includes role modeling, advising, and contributing. The second type involves supportive interactions, and includes comforting, encouraging, observing, participating, and nurturing.

The mentoring behavior takes place as custodians choose a student to guide. Many of the responses I received show custodians taking a personal interest in helping students and wanting to assist them by being examples to them and sharing their stories with them. Sometimes the custodians were chosen by the students and were sought out for whom they represented. The studies showed that minority students were greatly impacted by minority custodians and would seek them out for life advice. In turn, minority custodians saw themselves as agents of the institution who could speak directly to the trials of the minority student. Often, minority students and custodians come from similar cultural backgrounds and can relate on several levels.

The second type of employee-assumed behavior is more parental, and involves custodians acting as surrogate parents to students who are away from home. Often, it is the custodian's empathy that leads them to students in need, whether that need arises out of stress from exams, project deadlines, or just being away from parents for the first time. Such supporting behaviors can include a custodian showing up at a student's athletic event, fine arts exhibit, or graduation, or talking with a student before, during, or after a big exam or project.

Students may seek such support at times when they could use a more familial support system. For example, they may seek out custodians to introduce parents, partners, and children to other campus faculty or personnel at postgraduation and alumni events. For students who are from out of state, overseas, or are just homesick, custodians

can become surrogate parents providing emotional support, and, when needed, challenging them to do their best and carry on through the tough periods presented by the college experience. It is through behaviors like these that the university can see satisfied the purpose of social justice and life fulfillment for the student; such employee-assumed duties can lead to the humanization of their educational experience. These interactions also impact custodians by providing them occupational esteem and a greater sense of purpose in their work.

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These employee-assumed duties should be considered allies to education and the educator (Reed, 2015). Here, Reed is not asserting that custodians can take the place of a Ph.D.-level professor, but only insisting that each has a needed role in student success.

TWO ASSETS: APPROACHABILITY AND ACCESS

The role of custodians is unique in a collegiate setting, and includes two factors that can aid them in impacting student success. The first factor deals with their perceived role. Compared to other groups on campus (faculty, staff, and even students), the custodian has little to no perceived authority. This lack of authority can assist the custodian when interacting with students, especially those who are emotionally needy. The “non-authority” of custodians allows students to interact with, share, and receive from them without feeling as if they are threatened or need to put up defensive walls. Additionally, a student’s perspective on custodians is different than what they are typically exposed to. That perspective isn’t of a peer, an educator, or a staff person with authority, but of someone outside their normal circles, and it can provide a fresh approach to an experience that seems overwhelming and a reminder that, though circumstances can appear to be all-consuming, they don’t need to be.


The second factor is custodian access. Custodians are in places that most other staff are not. By being in places that most in authority are not, custodians are granted more personal access to the student. Often this personal access allows them to bear witness to activities that most highlight a student in need, which means they can have a direct impact on student success, beyond that of just cleaning, simply by being present.

It is my personal history that has led me to believe so strongly in the positive impact custodians can have on student success. I have seen custodians intervene effectively with students in many situations and circumstances, including those distressed due to loneliness, homesickness, and stress from exams and research papers.

Custodians have been the first to see those extreme situations, discovering and then helping students recovering from alcohol abuse and suffering through eating disorders, and even dealing with suicide attempts. Custodians are there to see and know the students who are living in the woods or out of a vehicle while going to class. They are the ones who see students losing their hair due to the stress of exams and projects.

With their lack of perceived authority, custodians are able to present themselves as approachable. With genuine concern, they are able to assist students to get the help they need. One notable comment from a custodian summed up how custodians can impact student success: “There are days when a student seems lost and they are nobody; nobody sees them. But I am somebody to them and they can be somebody to me.”

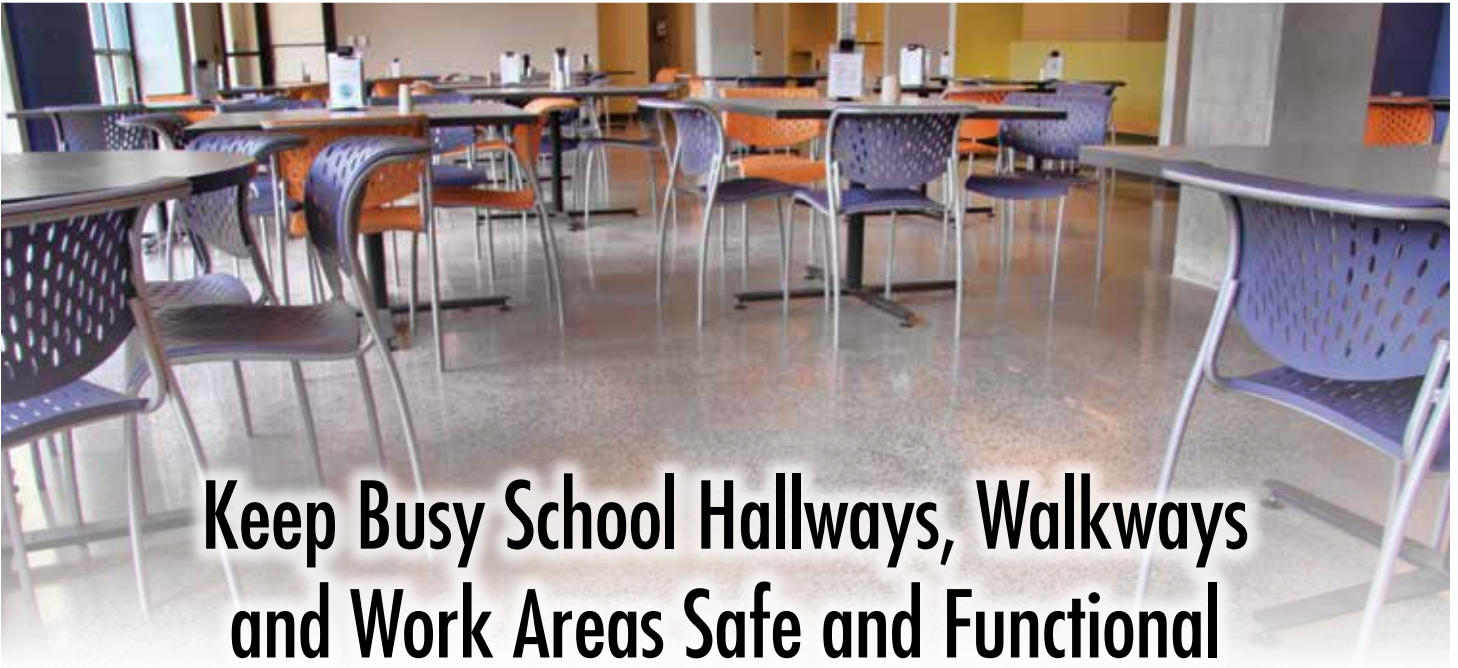
By providing additional awareness training and some basic personal interaction skills, custodians can be better prepared

to engaged a student population that needs mentoring, role modeling, and emotional support. Those custodians can help direct students to the sources capable of providing needed assistance. Not only would this preparedness help students, it could provide a greater sense of purpose and fulfillment for custodians. 

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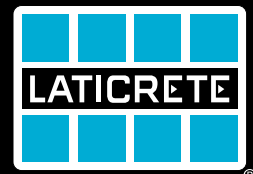
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Aligning Facility Management *with an* Organization's Core Business:

*Added Value as it Relates to Recruitment,
Selection, and Employee Retention*

By Jerome Roberson, Ph.D.

This article summarizes the results of a report prepared as a doctoral dissertation and peer-reviewed by APPA's Center for Facilities Research (CFaR), entitled "Aligning Facility Management with an Organization's Core Business." The purpose of this study was to compare the alignment between facility management services and an organization's core business from the perspective of strategic alignment.

OBJECTIVE

Four research questions and eight hypotheses were used to compare the relationship between facility management and an organization's core business. A quantitative nonexperimental, comparative, cross-sectional survey research design was also used to investigate that relationship. The rationale for selecting these approaches was fourfold: First, the research questions sought to compare the relationship between facility management alignment and an organization's core business. Second, the hypotheses were used to test the comparisons between facility management and an organization's core business. Third, a nonexperimental, comparative design may be used to identify the differences between variables without implying a causal relationship. Fourth, a nonexperimental, comparative design is the most appropriate approach for data collected from study participants.

SUMMARY OF FINDINGS

Based on an examination of the null and alternative hypotheses, the overall findings of the study seem to suggest there is no existing alignment relationship between facility management and an organization's core business.

- Research Question 1 found that facility management professionals believe a difference exists between facility management services and the strategic alignment of a university's core business.
- Research Question 2 found that facility professionals believe facility management services are not essential to a university's core business.
- Research Question 3 found that facility management professionals believe facility management services do not add value to their university's core business.
- Finally, Research Question 4 found that facility management professionals believe facility management's reputation plays a role in the alignment of facility management services and a university's core business.

BACKGROUND

Facility management has not achieved the status and recognition of other management disciplines, such as leadership management, organizational management, or financial management. Lack of empirical research, lack of publications in peer-reviewed and scholarly management journals, and lack of interest by leading management scholars to conduct research in facility management have contributed to the current scarcity of scholarly research in this field; another contributing factor is the absence of facility management educational programs at most major research universities.

In the next section, we operationalize the findings of Research Question 3, which suggests that facility management professionals believe facility management services do not add value to their university's core business. The following topics will be discussed from the perspective of added value: workforce, human resources management (HRM), recruitment, selection, and employee retention.

WORKFORCE AS ADDED VALUE

As described in my research study, the value of facility management was one of the four major research questions and variables I investigated. The intent of my research at the time was not to provide solutions to the questions proposed in the study, but to leave those questions open to interpretation in regards to what the value of facility management represents to your organization. In this article, I discuss the effectiveness of workforce recruitment, selection, and retention strategies as they pertain to the value of facility management.

In my study, I defined the value of facility management services as the perception by the customer that facility services have contributed to the organization based on the cost and risk associated with that service. Similarly, the added value of the workforce is the perception by the customer that the workforce has or is contributing to the organization based on the cost and risk associated with the workforce.

An organization must understand the characteristics and job trends of local and national workforces before the value of their workforce can be translated into recruitment and retention strategies. The transition to a more service-oriented and information-based economy has increased the need for a more educated workforce. Some see the lack of a workforce where the majority of workers have some form of postsecondary education as a national security issue. The sentiment was echoed by other researchers that a more educated workforce is needed to ensure that the United States remains competitive. A common answer shared by several researchers to the question of why the workforce has a shortage of college-educated workers is that there is a misalignment between workforce demand and the ability of colleges at all levels to meet that demand.

Carnevale and Desrochers (2002) believe that this misalignment is occurring at a period in the educational process that they call the "missing middle." The missing middle they describe typically happens for young adults with some form of





education, as they are having their first experience of real work and independence, and may begin in the freshman year of high school. According to Carnevale and Desrochers, the missing middle has three characteristics: First, for high schoolers, the curricula needed to bridge the gap between education and careers after graduation are missing. Second, these young adults are also missing the relationships that help to bridge those gaps. Third, the funds to acquire a college education after high school will also restrict many high school graduates from pursuing a postsecondary education.

Altstadt (2011) believes this misalignment occurs for a fundamental and practical reason, which is the inability of postsecondary schools to prepare graduates for jobs that are in demand and to identify those jobs. Community colleges are especially challenged, because they are faced with increased competition from online programs and four-year colleges as well as dwindling state support. Community colleges also lack the administrative structure to identify the type of jobs employers need.

While high school and postsecondary education do not align with workforce demands, we cannot point all the blame at educators; we also suggest that employers have not played a significant role in informing educators of their employment demands.

HUMAN RESOURCE MANAGEMENT AS AN ADDED VALUE

The preceding paragraphs attempted to lay out the reasons why there has been misalignment between workforce demands and organizations. This section will examine how organizations can effectively align human resource management (HRM) with their business as a value-added resource. Human resources is the function that manages the people within an organization in pursuit of its objectives. The next several paragraphs will compare and contrast three concepts used to effectively align an organization's HRM function: the **resource-based** view; the **person-organization fit** approach; and the **person-job fit** approach.

The resource-based view is an approach in which strategic HRM is based on effectively aligning the recruitment and selection process within an organization. The person-organization fit approach may be described as an agreement approach between the person and the organization to meet their respective needs (Agarwal, 2012). The person-job fit is how the employee perceives the internal environment of the organization.

RESOURCE-BASED VIEW AND HRM

The resource-based view and the person organization-fit approach are concepts that may be used to explain the link between HRM and an organization. The resource-based view as it relates to human resources affords a means by which human resources can be viewed from an economic perspective. As such, human resources add to the competitive advantages of an

organization, such as physical and organizational resources.

In their study on the resource-based view, which tested the effectiveness of technical and strategic HRM, Hustled, Jackson, and Schuler (1997) surveyed 293 publicly held U.S. firms. Their survey measured categorical questions pertaining to HRM effectiveness, HRM capabilities, and firm performance. The results show a competitive investment for the organization when investing in human resources.

PERSON-ORGANIZATION FIT AND HRM

On the other hand, the person-organization fit approach stands in stark contrast to the resource-based view in its relationship to HRM. The changing nature of human resources and the expectation of individuals within organizations point to the rise of the person-organization fit concept. The attitudes of a new and emerging workforce are the driving force behind this change.

There was a time prior to the early 1980s, perhaps earlier, where employees had the expectation of coming to an organization, working for 30 or more years, and then retiring. This is no longer the expectation by employees in an environment where change is the norm and where the companies that employ them are constantly seeking the competitive edge. The emerging workforce is looking to work in organizations that have enriching environments and share and welcome their values and ideas. As a result, human resources has had to adapt to this new workforce.

The concept of the person-organization fit as it relates to human resources affords a means by which the individual can be compared at the organizational level. As such, HRM adds to the organization's competitive advantage. In their study on person-organization fit, which tested posthire HRM practices, Autry and Wheeler (2005) surveyed 469 warehouse workers located in Pennsylvania, Georgia, Oklahoma, and Texas. The results showed a positive relationship between new hires with supervisors and coworkers as time passed.

PERSON-JOB FIT AND HRM

Person-job fit represents the continuing theme of the changing attitudes of employees and the ability of HRM to adapt to those changing attitudes. From the perspective of person-job fit, the change is occurring at the individual level of the organization.

There are two factors to consider when analyzing person-job fit at the individual organizational level: structure and culture. Structure at the individual level of the organization accounts for knowledge, skills, and ability, while culture accounts for employee attitudes.

Recruitment, Selection, and Employee Retention as Added Value

This section will examine how organizations can effectively align recruitment, selection, and employee retention as value-added resources. Recruitment is a set of tools and methods used to attract talented people to an organization for hiring

purposes. Selection is the process used by organizations to identify if the new people attracted to the organization have the necessary knowledge, skills, and abilities to be invited to join the organization.

Employee retention is probably more challenging than either recruitment or selection, because it involves the methods by which an organization will commit time and resources encouraging employees not to leave the organization but stick with it.

Recruitment and Selection as Added Value

To understand the process of recruitment and selection as an added value, the principle of person-organization fit must be considered. The principle of person-organization fit allows the organization to consider the norms and values of the applicant, but at same time allowing the organization to find a qualified applicant. Therefore, the organization should develop recruitment and selection criteria from the perspective of the applicant. Several studies have been conducted that seem to support the use of person-organization fit as a basis of applicant selection; two of those studies are discussed here.

In their longitudinal study of person-organization fit, Cable and Judge (1996) looked at 96 active job seekers. They attempted to test eight factors: job seekers' values, demographics, job choice, job opportunities, organizational commitment, job satisfaction, intent to leave, and willingness to recommend the organization. The results of their study showed that when the selection process is based on person-organization fit, applicants demonstrate a favorable attraction to the organization.

Another study by Cable and Judge (1994) analyzed pay preferences. In this study the researchers investigated pay as a motivating factor for attracting job seekers to an organization from the perspective of person-organization fit. The dimensions analyzed included

pay level, flexible benefits, individual or group rewards, and pay stability. Again, the study results showed that when the selection process is based on person-organization fit, applicants demonstrate a favorable attraction to the organization.

Employee Retention as an Added Value

A proven employee-retention strategy that helps an organization hold on to highly skilled workers is key to its

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success, and a well-thought out plan makes this possible. For example, Hamid and Yahya (2010) studied person-job fit from the perspective of work engagement. They surveyed 271 engineers, measuring the influence of person-organization and person-job fit on work engagement. The results showed that person-organization fit and person-job fit had a positive impact on work engagement.

For an employee retention strategy to be truly effective in holding on to skilled workers, it must promote an internal environment with a culture that matches the values of employees. Person-job fit is a key approach to supporting a culture capable of retaining highly skilled workers and influencing employee turnover. In their study on person-organization fit to affect employee retention, McCulloch and Turban (2007) surveyed 228 call-center workers located in Canada, examining how person-organization fit influenced job performance, employee retention, and job satisfaction as they related to high employee turnover, in a challenging job setting. The study showed that person-organization fit had no influence on job performance as a means of reducing employee turnover. However, it did show that person-organization fit influenced job

satisfaction, and that it did affect employee retention as a means of reducing employee turnover.

CONCLUSION

Although in my research study, facility managers did not find that added value aligned with the core objectives of their organization, the concept of added value is a useful concept that management should use to learn more about their organization at the individual, group, and organizational level. I attempted to operationalize added value from the perspective of resource-based view, person-organization fit, and person-job fit. Each of these concepts displays five common themes that can be useful in adding value to an organization. Themes common to resource-based view, person-organization fit, and person-job fit include the following:

- An organization's human capital has the potential to be a source of competitive advantage.
- Sources of human potential exist in the knowledge, skills, abilities, norms, and values that individuals bring to an organization.
- Human capital has the potential to become a source of competitive advantage if the fit between the individual and the organization is aligned.
- Attracting exceptional talent to an organization can be a source of competitive advantage if the applicant perceives the organization as having similar norms and values.
- Retaining exceptional talent can be a source of competitive advantage if there is a mutual understanding between the individual and the organization that they share similar norms and values. (5)

Jerome Roberson is facilities director at the Howard University School of Law, Washington, DC; he can be reached at jroberson100@gmail.com. This article, his first for *Facilities Manager*, stems from his doctoral dissertation for his Ph.D. in organization and management, with a specialization in leadership, from Capella University, and his peer-reviewed research completed under the auspices of APPA's Center for Facilities Research (project CFaR028-13). For a more extensive version of this research report, including all citations, visit www.appa.org/research/cfar/completed.cfm.

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Windows of Opportunity

How to Choose the Best Window System for Your Replacement Project

By Jon F. Lindberg, P.E., RRC, and Kelsey McMenamy, P.E., CDT

Selecting the right replacement window type for a building can be challenging. There are several factors to consider: cost, performance, operation, size, safety, glazing requirements, finish, durability, maintenance, aesthetics, and location. The correct balance of these factors is necessary to select the most appropriate window type for each building or application.

It is common to base a window replacement design on the original windows; however, with advances in performance, durability, and aesthetics, there may be better choices available. It is beneficial to explore all options before selecting the window, glass, and operation type for your building.

WINDOW SYSTEM COMPARISONS

There are four window product types commonly used in commercial, educational, and residential buildings:

- Extruded aluminum
- Wood
- Rolled steel
- Vinyl

Each type has its own physical properties and proven performance characteristics.

ALUMINUM WINDOWS

Aluminum windows are manufactured using extruded aluminum alloy sections that are custom fabricated to a variety of lengths and sizes to accommodate an assortment of configurations. Aluminum windows provide a durable frame system that can withstand heavy use while spanning large openings without extensive frame modifications. Aluminum windows will not rust or rot, reducing maintenance costs over their expected service life of 30-plus years. In most instances, the need for replacement is typically associated with failed glazing, hardware, and/or weather-stripping, and not due to deterioration of aluminum components.

Aluminum frames can accommodate various operable sashes, such as double- or single-hung units, casement, sliding (horizontal and vertical), and projected (awning and hopper) types. Aluminum can accept different glazing thicknesses, ranging from noninsulated units to triple-glazed insulated glass.

Aluminum can also accommodate a variety of finishes, such as anodized, high-performance, and organic coatings. Coatings provide color permanence, require minimal maintenance, and deliver exceptional weatherability.

A unique advantage to using aluminum windows for replacement is that they can accommodate detailing features that replicate historic wood windows. By integrating extruded aluminum scroll panning to represent brick molds, sloped glazing stops to mimic glazing putty, and exterior mounted aluminum muntins, aluminum windows are a typically less-expensive/lower-maintenance alternative to replacing or repairing wood windows, while maintaining their historic appearance.

A disadvantage of aluminum is its high thermal conductivity. Aluminum readily conducts heat and cold, which reduces thermal performance. To accommodate this, aluminum extrusions are manufactured with self-contained structural thermal breaks, both in the frame and operable sashes, so as to reduce thermal transfer of heat and cold through the conductive metal. The thermal break reduces energy costs by increasing the thermal performance of the aluminum frame by as much as 19 percent over nonthermally broken extrusions.

Recent advances in the development of thermal breaks, insulated glass units, glass coatings,

and spacers have significantly increased the thermal efficiency of aluminum windows. However, even when thermally broken, aluminum will not approach the thermal performance of vinyl or wood window products.

Although durable, aluminum frames and sashes are not easily repaired if damaged and often require complete replacement. Replacing sashes is easier, since they are independent of the window frame.

VINYL WINDOWS

Vinyl windows are made from polyvinyl chloride (PVC) extrusions with welded frame corners for structural and thermal performance. Vinyl windows have a high resistance to heat, cold, and humidity. Since the frames are made of PVC, they are more resistant to deterioration. Vinyl windows are most commonly constructed as single- or double-hung or casement units, and are readily available in standard sizes. Custom sizes typically require significant cost upcharges and manufacturing delays. Vinyl windows do not easily form to complex shapes, such as arches or polygons.

Vinyl windows have a relatively low conductivity, therefore in-frame thermal breaks are not necessary. In general, vinyl windows are approximately 20 percent more efficient than thermally broken aluminum window systems. The result is higher thermal efficiency and increased energy savings.

Aluminum window, curtain wall, and insulated metal wall panel replacement.



Vinyl windows are considered the least durable window products. Without inner-frame reinforcement, they cannot accommodate large-sized openings. This may require the placement of additional mullions (horizontal and vertical). Maximum opening dimensions typically cannot exceed 80 in. in height. As with the other window products, vinyl can accept a variety of different glazings but typically uses glazing less than 1 in. in thickness.

Depending on a window's size limitations and profile, vinyl windows are typically the least expensive window product. They require little maintenance of frames and sash members, but can suffer from deterioration of seals, weather-stripping, and glazings similar to what can occur in aluminum products. Vinyl windows have had a history of deformation over time under exposure.

WOOD WINDOWS

Wood windows are easily formed to complex shapes and decorative profiles because they can be custom fabricated. Wood frames can accommodate large-scale openings and complex shapes without added supports or stiffeners. However, larger spans may require thicker wood members to accommodate the span, which can reduce the amount of glass and result in increased sight lines. When damaged, wood windows are easily repaired. Depending on the magnitude of damage, it is possible

to replace the damaged member only, rather than the entire window.

Wood, like vinyl, has a low conductivity, providing approximately 20 percent more energy efficiency than aluminum systems. However, wood windows are limited to glazing thickness ranging from 1/8 in. to 1 in. Due to their construction, thinner glazings are more common than 1-in.-thick insulated glass. This is partially because of the limited strength of the glazing stops and glass bite sections in the frame or sash.

Historic wood windows typically have a single pane of glass and are difficult to incorporate into a thicker glass due to the limited space and strength of the glazing putty. Instead of insulated glazing, storm windows are typically used in conjunction with uninsulated single-pane glass to increase thermal performance. Wood windows typically have a higher material and installation cost than aluminum or vinyl.



Historic replica aluminum replacement windows.



Steel window replacement and restoration.

STEEL WINDOWS

Steel windows are formed from cold- or hot-rolled sections with mitered and welded corners for durability, strength, and weather protection. As the steel frames are rolled, they can be formed into complex shapes and still have welded frame construction. Steel is superior to the other products in strength, so the frames are available in thinner sections, allowing for reduced sight lines. Operable units within steel windows are typically limited to pivot or projected types, which may limit replacement options if the existing windows are to be replaced in kind.

Like aluminum, steel windows have high conductivity, resulting in reduced energy efficiency. Steel windows can accommodate a variety of glazing thicknesses, ranging from 1/8 in. to 1-1/8 in. Glazings are held in place with aluminum alloy glazing beads that can be removed to replace the glass.

While steel windows offer advantages, they are typically more expensive than aluminum or vinyl. This can be offset by the longevity of the window system, since steel window frames can last up to 75 years if properly maintained. However, during that period, maintenance to hardware, finishes, and weather-stripping is required to maintain the window's performance.

WINDOW OPERATION COMPARISON

With each operational type comes a variety of benefits and restrictions that must be considered when making the selection

for window replacement. The following five window unit operation types are typically used in commercial or residential applications:

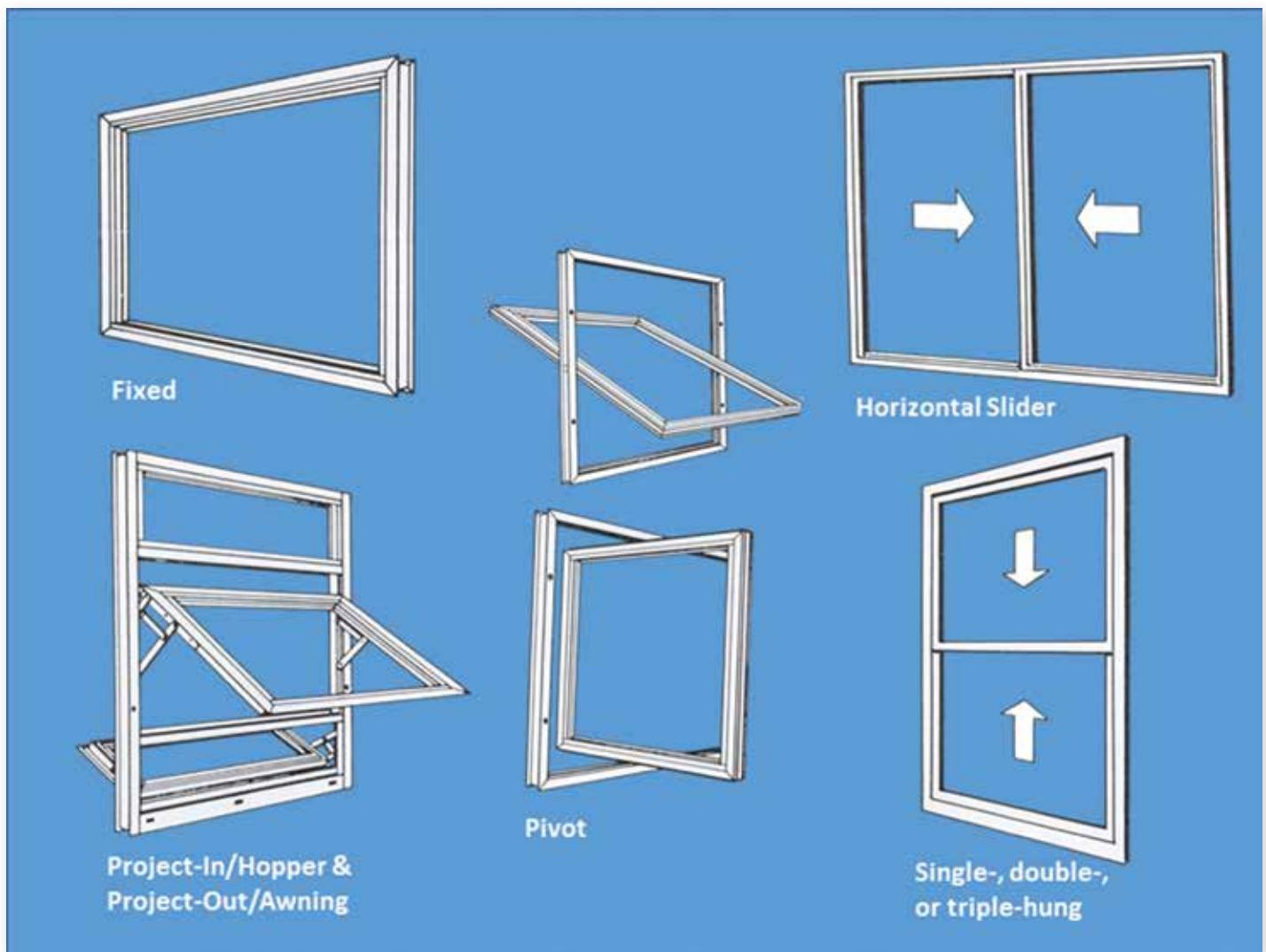
Fixed Windows

Fixed windows offer no ventilation, as the frame is fixed in place. They are typically used for picture or transom windows, or in combination with an operable unit.

Projected Windows

Projected windows are generally easy to operate. Both awning- and hopper-style units offer fair ventilation, as the sash must remain small due to hardware restrictions. Casement units offer the best ventilation per square foot of window opening, because over 90 percent of the window is operable. Projected windows are considered compression sealed and typically have better air- and water-infiltration test results, because the sash is pulled tight against the frame when closed and locked.

Drawbacks to these windows include being difficult to clean from the building interior, since the exterior surface of the glass is out of reach. Projected windows can have safety concerns when fully opened, as the sash projects away from or into the building. Sash limiters can be installed to control the range of operability and reduce safety risks. Projected units tend to be more expensive than other types due to the amount of hardware required to operate the window.



Variety of window operations.

Hung Windows

Hung windows are generally easy to operate using sash balances that reduce the weight of the sash for the user. These windows offer limited ventilation, because generally less than half of the window is operable at one time. Tilt-in sashes allow for easy cleaning of the interior and exterior side of the glass. There are minimal safety concerns, since these windows operate vertically and do not project into or away from the building. Hung windows are considered sliding-seal windows and typically do not perform as well as compression-seal windows for air and water infiltration.

Horizontal Sliding Windows

Horizontal sliding windows are similar to hung windows, except that their sashes slide horizontally. Balances are not utilized to alleviate the weight of the sash, requiring the user to move the full weight of the sash frame and glass. Depending on the size of the unit, this can be considerable. In addition, the horizontal sill slide track located at the bottom of the window

may frequently become filled with dirt and debris, impacting ease of operation. Horizontal sliders do not offer tilt-in features, limiting the window area that can be cleaned from the interior.

Pivot Windows

Pivot windows are hinged in the center of the sash on the horizontal (vertical pivot) or vertical (horizontal pivot) surfaces. As with projected units, there are safety concerns with their use because the sash projects away from and into the building. These windows offer excellent ventilation, since over 90 percent of the window opening is operable. Pivot windows can be fully cleaned from the interior.

Glass and Glazing Comparison

Each window type listed above can accept a variety of glazing thicknesses and types. New glazing should consist of 1-in. thick, hermetically sealed, insulated units to increase the thermal performance of the glass by as much as 37 percent over conventional single-pane glass.

Insulated glazing consists of two or more lites of glass sealed together, enclosing a hermetically sealed air space. Glass lites and the air space can vary in thickness to accommodate a variety of window frame configurations or to achieve a desired thermal performance. The glass lites are sealed to a hollow spacer, typically constructed of aluminum or stainless, coated, or galvanized steel to prevent rusting. The hollow core of the metal spacer is filled with a desiccant to absorb limited amounts of moisture within the air space. This structure works to help prevent fogging of the glass unit from moisture trapped between the glass lites.

In a sealed-glass insulating unit, air currents between the two panes of glazing carry heat to the top of the unit, allowing cold pools to develop at the bottom. Filling the space with a less conductive, or slow-moving gas minimizes the convection currents within the space. Conduction through the gas is reduced as well as the overall transfer of heat between the inside and outside.

The space can be filled with a gas such as argon or krypton. Argon offers better thermal performance to air but costs more. Krypton offers an even better thermal performance than argon but is even more expensive. Krypton is most useful when the insulated glass unit is thin and increased thermal performance of the air space is needed.

For additional thermal performance, tinted and reflective glazings are utilized to limit solar heat gain and solar glare. Additionally, low-emittance (Low-E) coatings are applied to the surface of the glass within the insulated unit. Low-E glass reflects heat during the warm months and helps prevent heat loss during the cool months.

GLAZING

There are many glazing options that enhance and improve the security, durability, and effectiveness of windows.

- Security glazing
- Laminated glazing
- Applied security films
- Glass-clad polycarbonate
- Tempered glass

SUMMARY

The variety of window materials, configurations, and

glazing compositions are extensive. However, proper design considerations are addressed if the building can give decades of performance combined with aesthetic appeal for the building owner. 

Jon Lindberg is a principal at Gale Associates, Weymouth, MA; he can be reached at jfl@gainc.com. Kelsey McMenamy is Gale Associate's senior project engineer and can be reached at krm@gainc.com; this is her first article for *Facilities Manager*.



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2018 Editions of Group A I-Codes: Ready for Release

By Dana Peterson, AIA

By the time you read this, the 2018 editions of the Group A I-codes (including the International Building Code (IBC), International Fire Code (IFC), International Mechanical Code (IMC), and International Plumbing Code (IPC), just to name a few of the more widely adopted and used), will have received their final approvals by the voting members of the International Code Council (ICC), and the editions will have been released to the various states and municipalities for their review and adoption into law as your city or state code.

As has been the case for each of the last three review cycles, the ICC Work Group, working

under the APPA Standards and Codes Council (ASCC), met through successive conference calls this spring to review and discuss the changes that will affect educational facilities. With the help and guidance of a professional code consultant, the Work Group, comprising facilities representatives from nine universities, two community colleges, one public school district, and two business partners, reviewed and debated the relative merits and drawbacks of 63 different change proposals. In the end, the group recommended that APPA members support 37 of the proposed changes and oppose 24, and took a neutral “no-comment” position on the remaining 2. After reviewing the Work Group’s effort, the ASCC Council voted to change the vote on one proposal (F91), a proposal to establish a requirement that fireproofing must be maintained, from “oppose” to “support,” due to the fact that only one vote was received on that proposal. These positions were taken to the Committee Action Hearings in Columbus, Ohio.

One proposal that was amended (F263, making owners responsible to institute and enforce a fire safety plan for areas under construction) was opposed, and while the amendment made noncompliance fines to owners optional and not mandatory, this did not overcome the many other objections the Work Group and the Council had to this proposal.

The changes to the IFC suggested in proposals F263 and F264 could cause additional costs. If the IFC is not an enforced code in your area, these changes will not affect you. However, if it is, you can expect a substantial increase in your construction costs, and most likely a need for larger schools and districts to create an entirely new, staffed department for round-the-clock fire



inspectors and plan writers when the IFC's 2018 edition is adopted in your jurisdiction. The Council drafted and approved a public comment in an attempt to lessen the impact of these changes by requiring the fire-safety plans only on projects of Type III or Type V construction, and not requiring a fire watch so long as an active alarm system is in operation. (For detailed proposal tracking, visit <https://www.appa.org/standards/standardsenergycode.cfm>.)

APPA's public comment was read aloud during the ICC Annual Conference in Richmond, Virginia (October 21-29) where the ICC membership took a final vote (in person at the conference, or online via ICC's cdpAccess system) on all of these measures. The outcome of the vote is currently unknown as of this writing, but will be known when this article is published. Any APPA member institution who has any staff involved in code enforcement, advocacy, or development is eligible to join ICC as a voting "Governmental Member" at \$25.00 per year. If your school has been delegated authority to enforce code on your campus, issue minor electrical and plumbing permits, conduct fire safety inspections, or if you have sent representatives to your state capital to argue for or against particular code provisions, or have representatives that sit on state or national code development committees, you are eligible to be a voting member of ICC. Depending on the size of your institution, you would be allowed to designate from 1 to as many as 7 individuals to vote.

The ICC Work Group will begin reviewing the Group B codes at about the time this article will appear. The principal

code in that group is the International Energy Code. The APPA Work Group is always looking for new schools to join in; please contact Billie Zidek at billie@appa.org if you would like to join us. ☺

Dana Peterson is retired from the University of New Hampshire in Durham, NH, and a member of the ASCC. He can be reached at danaspeterson@unh.edu.

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When Diversity and Inclusion Become Second Nature

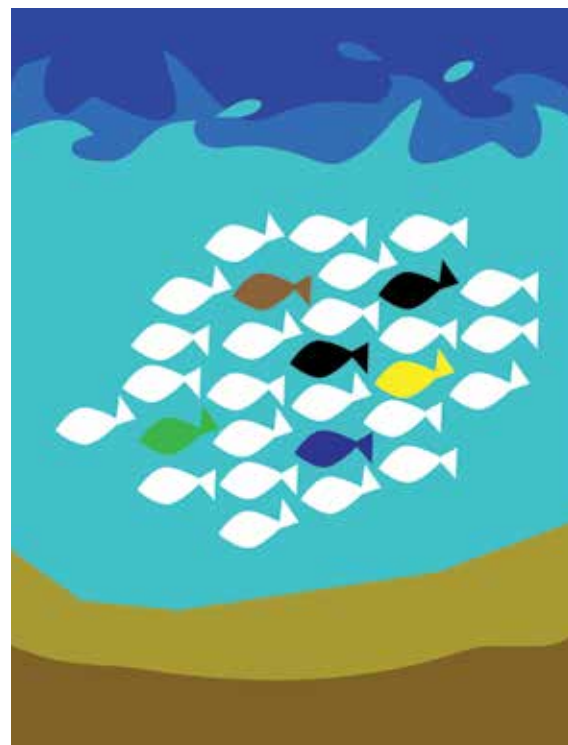
By Matt Adams, P.E.

It can be said that the move toward diversity started in 1964 with Title VII of the Civil Rights Act. If you can't remember it from your history class, this act prohibits employers from discriminating against employees on the basis of sex, race, color, national origin, and religion. Fifty-four years later, the concept of workplace diversity is ubiquitous and is rarely mentioned without the additional concept of inclusion. Most of our peers have had diversity goals for hiring and procurement for decades. There are some institutions that don't enthusiastically strive for workplace diversity or inclusion.

However, there are many others that have adopted these principles as core values. These peer institutions have gone beyond simple annual targets to much more sophisticated programs encompassing all levels of the organization and now, local communities. These determined institutions have proven to themselves that diversity and inclusion are not just culturally appropriate activities, but offer tangible benefits to both the institution and the community. Stated another way, in a world often driven by the bottom line, it is clear that genuine efforts at workplace diversity and inclusion yield significant returns on investment.

EMPLOYING NEW BEST PRACTICES

The business of higher education is changing very fast; reviewing the results of the APPA annual Thought Leaders symposium offers proof of this fact. What they reveal is that while money is still one of the primary drivers of change, the traditional operations of our institutions of higher learning are under review. Facilities departments have operated



under the unofficial mantra of “do more with less” for decades—but now entire universities are under this pressure.

The long-term viability of some institutions is at risk; for most, internal change is required. This often means adopting best practices that other industries have employed for decades—including diversity and inclusion. The largest asset that any institution manages is its faculty, staff, and students. Not unlike a company, a university is really nothing more than the sum of the values and performance of its people. Given this realization, our peer leaders are recognizing that diversity and inclusion are key values to help institutions of higher learning survive and thrive for the next 50 years. Our people represent the largest opportunity for performance improvement for each of our institutions. This knowledge is coupled with the fact that as baby boomers retire, it is getting more and more difficult to attract talent.

One example of a university that is proactive in the area of diversity and inclusion is the University of Colorado Boulder (CU Boulder). Known as a progressive institution, the university is a leader in the recognition of diversity and inclusion as “values” and not obligations. Terri Willis, CU Boulder’s director of human resources for infrastructure and sustainability, explains one diversity initiative she is working on: “In a recent discussion with our Pac-12 FM human resources group, we talked about

how hiring and retention are top concerns for us—especially in the skilled-trades positions. Getting referrals from current employees is one good way to help fill that pipeline. Employees who work in organizations with healthy, inclusive work cultures are more likely to refer their family and friends for these vacancies.”

HUMANS NEED TO FEEL NEEDED AND CONNECTED

Increasingly we hear a great deal of talk about the culture of our facilities departments. Our peer leaders clearly believe that investing in and nurturing that culture is paramount to success. As the famous management theorist and educator Peter Drucker once said, “Culture eats strategy for breakfast.” We know that a positive culture is based on the core values we select for ourselves and demonstrate in many forms. A culture including the values of diversity and inclusion either directly creates or passively enables a great many tangible and intangible benefits to our institutions and respective facilities departments.

Willis points out one of the greatest of these benefits: A culture of diversity and inclusion helps our department become an “employer of choice.” Just as important as the acquisition of good people is their engagement (read inclusion) in our workplace, such that we actually fulfill some of their human needs. Staff are fulfilled when they feel welcomed and sense that they belong—this is the definition of inclusion. Humans need to feel needed and connected.

Fulfilling this need can bring significant advantages to our institutions. We need a diverse workforce to meet the future employment needs of our institutions. However, this diverse workforce will be fulfilled and productive only if the workplace culture is one of inclusion. If inclusion is real, our people will thrive in this culture—and the resulting benefits for our FM departments are many. If our most valuable assets—our people—are thriving, the return on investment is so significant that no complex financial models are required to see it. How much is a conservative 5 percent increase in all positive performance value metrics worth to you at this point of change in our industry?


Earlier I mentioned that some leaders are exploring the philosophy of diversity and inclusion with much more sophistication than others. Many are beyond the basic concepts and now seek to learn, create, and implement new best practices to

nurture their cultures. At the University of Chicago (UChicago), Derek R. B. Douglas, vice president for civic engagement and external affairs, states that he intends to help the university quickly reach a point “when diversity and inclusion are second nature.” There is no doubt that for most institutions, implementing these values will soon become a commonly applied business practice as routine as cost accounting, safety training, or professional development.

THE IMPACT ON LOCAL COMMUNITIES

The next level of sophistication in incorporating diversity is demonstrated at UChicago by looking at the impact that its culture of inclusion has on the local community surrounding the university. Its facilities department has voluntarily set more aggressive diversity goals for itself—its targets of 35 percent minority business enterprises (MBE) and 6 percent women’s business enterprises (WBE) are in fact higher than the City of Chicago’s targets. However, the deep “town-and-gown” relationship necessitated by these goals has many benefits for the community. In order to meet its aggressive quotas, the university must invest in the local community in “multidimensional” ways, including mentorship programs; partnerships with large contracting, design, and supply firms; and support of local high schools and technical colleges.

The university also supports small businesses in its five surrounding zip codes as they grow from sole proprietors to much larger enterprises. These and other practices help strengthen the local community and create a vibrant, multicultural business climate good for both the local residents and the university—it’s a win-win situation. Approximately 55 percent of the faculty and staff of UChicago live in the local area; and if this locality is attractive, vibrant, and inclusive, everyone wins.

As diversity and inclusion have now become best practices for the facilities industry, new and clever ideas are popping up—and many of the best of them come straight from the local community. Direct communication with that community enables our universities to discover new ways to nurture and grow cultures of diversity and inclusion. The benefits are obvious, and the math is simple. Now a group of champions are moving these value-based cultures to the next level. 

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

Learning and Gathering: APPA U in Washington, D.C.

By Corey Newman

APPA U was held September 9-13, 2018 in Washington, DC. Showcasing another successful professional development gathering of the Institute for Facilities Management, Leadership Academy, and the Navigating the Facilities Portfolio program, colleagues from around the globe were welcomed to learn, network, and collaborate.


We are very grateful for the dedicated faculty who make these offerings such a success. A special note of thanks goes to Institute Deans **Mary Vosevich, Chris Smeds, Lynne Finn, and Don Guckert**; our Academy Faculty **Paula Farnsworth, Julius Williams, Chuck Farnsworth, Shawna Code, Viron Lynch, and Matt Adams**; and our Navigating the Facilities Portfolio Faculty **Chuck Scott and Jim Jackson**.

We also offered three new programs as part of our Continuous Learning Series:

- ASHRAE's "HVAC Design: Level I – Essentials: Tools for High-Performance Building Designers"
- APPA's "Leading Your Facilities Organization Through an Age of Transformational Change" and
- "Building the Smart Campus: A Workshop

on Successfully Employing Fault Detection & Diagnostics in the Campus Environment."

Throughout the week, students had opportunities to interact with experts who brought their vast knowledge and experience from diverse backgrounds and provided a rich environment for all attendees. Approximately 500 facilities professionals from across the United States, Canada, and Saint Kitts and Nevis attended.

As the week drew to a close, we celebrated with graduation ceremonies for the class of September 2018 (including 94 new alumni). A big kudos to all those institutional leaders who supported the professional development of their staff! The professional development of any individual must be as customizable as the individuals themselves, and APPA is here to help everyone achieve their personal, organizational, and institutional goals. Please visit the APPA website for more on all APPA program offerings. 

Corey Newman is APPA's associate director of professional development and can be reached at corey@appa.org.

Academy Graduates



Photos by Rhonda Hole

Institute Graduates



ACADEMY GRADUATES

In alphabetical order; not all graduates are pictured

Mark Brabham, *Virginia Institute of Marine Science*
 Melissa Burnette, *Sewanee: The University of the South*
 Emanuel DaSilva, *Foothill-De Anza Community College District*
 Ken Dehkes, *Hamline University*
 Seth Gilmore, *Weber State University*
 Kari Hasbargen, *North Dakota State College of Science*
 Brooke Hay, *University of Nebraska*
 Chad Henning, *Pennsylvania State University*
 Nathan Humphreys, *Milken Community Schools*
 Meghan Johnston, *University of Richmond*
 Warren Keith, *University of Cincinnati*
 Miles Kelly, *Seattle Central College*
 Jennifer Krebbs, *Indiana University Bloomington*
 Paul Lozo, *University of Richmond*
 Andrew McBride, *University of Richmond*
 Darrin Meszler, *University of Rochester*
 Larry Milby, *Illinois State University*
 Walter Molishus, *University of Pennsylvania-Philadelphia*
 John Regier, *University of Windsor*
 Chuck Rogers, *University of Richmond*
 Celia Ruiz, *Occidental College*
 Iafeta Sao, *Brigham Young University Hawaii*
 George Souleret, *University of Richmond*
 Kevin Stone, *University of Nebraska - Lincoln*
 Randy Sutherlin, *Indiana University Bloomington*
 Ben Triplett, *Washington State University*
 Marie Wells, *Brigham Young University - Idaho*
 John Williams, *John Tyler Community College*
 Melanie Witherspoon, *University of North Carolina at Charlotte*

INSTITUTE GRADUATES

In alphabetical order; not all graduates are pictured

Mohamed Afify, *SUNY at Binghamton*
 Christopher Bansil, *University of Arizona*
 June Bates, *University of Virginia*
 Brian Bergsma, *Fanshawe College*
 Walter Blevins, *Chabot-Las Positas Community College District*
 David Boehm, *University of Illinois*
 Lawrence Brien, *The College at Brockport SUNY*
 Tim Clark, *University of Kentucky*
 Tom Clow, *University of New England*
 Joseph Patrick Cooke, *Foothill-De Anza Community College District System Office*
 Craig Cromer, *University of Miami*
 Troyd Davis, *Pima Community College*
 Jessica I. DeWitt, *Stephen F. Austin State University*
 Caroline Doyle Ellis, *University of Kentucky*
 Colby D. Dye, *University of Iowa*
 Alison Ford, *Stephen F. Austin State University*
 Newman Forrester, *University of Colorado Denver/Anschutz Medical Campus*
 Dallas Fossum, *North Dakota State College of Science*
 Jamie Gayer, *Indiana University Bloomington*
 Joe W. Glass, *University of Illinois at Urbana-Champaign*
 Jeffrey Golden, *University of Maryland*
 Jeff Goodwin, *University of Iowa*
 John Haines, *Monroe Community College*
 Stefanie Harris, *Department of Defense*
 Brian Herman, *University of Guelph*
 Hugo Hernandez, *California State University-Stanislaus*
 Jason Higdon, *Indiana University Bloomington*
 Mark William Hilberg, *University of Maryland*
 Kenneth Horrocks, *Indiana University Bloomington*
 Robert Johnson, *Creighton University*
 Brady Jones, *Indiana University Bloomington*
 Jennifer Kindt, *South Dakota State University*

Matt Lawrie, *University of Guelph*
 Dennis Macy, *Indiana University Bloomington*
 Joseph E. Majeski, *Oregon State University*
 Jeffery A. Mallory, *Sewanee: The University of the South*
 Claudia Mangum, *Virginia Commonwealth University*
 Ellsworth J. May, *Princeton University*
 Donna McCray, *University of Alabama*
 Brad H. Menear, *State University of New York at Brockport*
 Rodney M. Merritts, *Pennsylvania State University*
 Mike Miller, *Indiana University Bloomington*
 Jason D. Moore, *University of Virginia*
 Robyn Narvesen, *University of North Carolina at Chapel Hill*
 Kenneth Neborak, *University of Pennsylvania-Philadelphia*
 Rachel Nelson, *University of Virginia*
 Justin Perry, *Rose-Hulman Institute of Technology*
 Sandy D. Redmon, *University of Kentucky*
 Jerilyn Roberts, *South Dakota School of Mines and Technology*
 Samuel Robertson, *Indiana University Bloomington*
 Todd Robinson, *Washtenaw Community College*
 John R. Ross, *Pennsylvania State University*
 Karin J. Sadler, *University of Massachusetts*
 Joseph Sanguedolce, *York University*
 Will Schnorr, *University of Virginia*
 Jeremy Sharp, *Kansas State University*
 Ward Sheeder, *Texas Woman's University*
 Michael J. Simpson, *State University of New York at Brockport*
 Phillip Stier, *North Hennipen Community College*
 Rachel Ann Taylor, *Kennesaw State University*
 Ryan D. Taylor, *University of Virginia*
 Travis Thomas, *California State University-Northridge*
 Christopher Allen Withrow, *University of Kentucky*
 Amanda Witt, *Middle Tennessee State University*

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

EVERYBODY LIES: BIG DATA, NEW DATA, AND WHAT THE INTERNET CAN TELL US ABOUT WHO WE REALLY ARE

Seth Stephens-Davidowitz, Dey Street Books, 2017, 352 pp. Available in hardcover, softcover, ebook, audiobook.

The world is changing. We're using data, yet distrusting data; we're acquiring products, yet acquiring services to avoid getting stuck with products. These changes are happening so fast that we're missing their significance.

One of the challenges with interviews and surveys is the risk that the person responding is not honest. Statistics provide us with tools to help deal with minor variations in responses and with applying a small number of samples to a large group. But until recently, statistics could not resolve the problem of respondents lying. That's what *Everybody Lies* discusses.

What subject do people lie about the most? Ignore the lies little children might tell before learning about telling the truth. Forget about the lies told to avoid hurting someone's feelings. Also, it's important to think about what someone might answer on a survey but act on differently when there's the perception that no one else is watching. Those questions are exactly what Stephens-Davidowitz had to focus on when developing the data behind the book *Everybody Lies*.

Let's accept the premise that it's difficult to get reliable answers on a survey from many different people—some folks just lie rather than tell the truth on a confidential survey. But if the premise is that people lie on surveys, how does one prove that lying has occurred? Consider this classic logic problem: "I'm telling you the truth: I always lie." Is the speaker telling the truth this one time or are they lying? Is the statement true or false? It's an interesting problem, and trying to prove a negative is difficult.

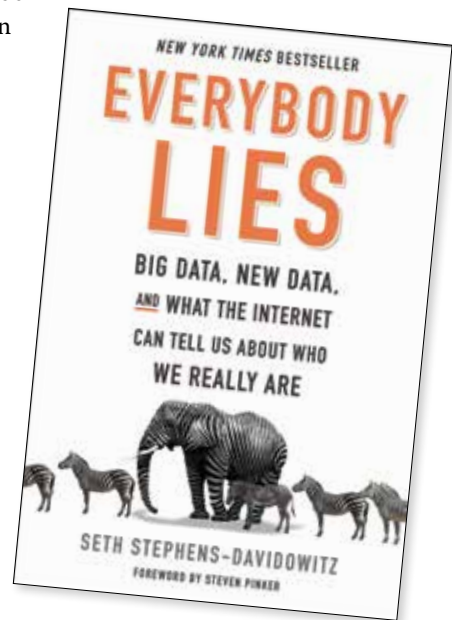
Throughout the book, Stephens-Davidowitz uses differences between surveys and publicly available data to prove that lying has occurred. The public source is Google search hits and site visits. While Google isn't the only search engine, it has a large user

base and its recordkeeping (of site visits, hits, and time) provides some interesting data.

Personally, I didn't like the particular subject the author chose to discuss—it's too easy. I don't find much value in knowing that people lie about this subject when speaking in public (yes, there are some honest people regardless of the subject). But the concept of using Google statistics to determine if people are likely to lie on a survey certainly is helpful and can provide insights on better questions to ask or alternate ways to conduct a survey.

Everybody Lies is interesting and can provide some researchers with a better understanding of the believability of survey-based results. It can offer them some good thoughts about alternate survey methods to avoid traps due to bad data. If you're interested in research and gaining a better understanding of your customers using a survey, consider reading *Everybody Lies*.

And what is the subject the author uses to prove that everybody lies? Sex, of course. 💰



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.

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MIURA has produced a new steam-boiler safety video. While it is generally agreed that industrial steam boilers are safe, the new video (https://youtu.be/5hio_2TJa6Q) explains why some boilers may be safer than others based on the laws of physics as well as a boiler’s physical design. The 4-minute presentation addresses a range of safety concerns, from the potential for catastrophic explosion to everyday safety issues that can result in injury, loss of work, increased downtime, higher insurance costs, and related productivity shortfalls. While day-to-day safety issues may not get the same media coverage as an explosion, they are front and center when it comes to people who work with and around industrial steam boilers. For more information go to Miura online at www.miuraboiler.com.



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