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Procurement and the
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IMPROVING & CELEBRATING CAMPUS SUSTAINABILITY

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By Monika Urbanski

The *2019 Sustainable Campus Index* (SCI), produced annually by the Association for the Advancement of Sustainability in Higher Education (AASHE), recognizes top-performing colleges and universities overall by institution type and in 17 sustainability impact areas. This feature excerpts 10 of the 17 SCI impact areas that are of particular relevance to facilities professionals.

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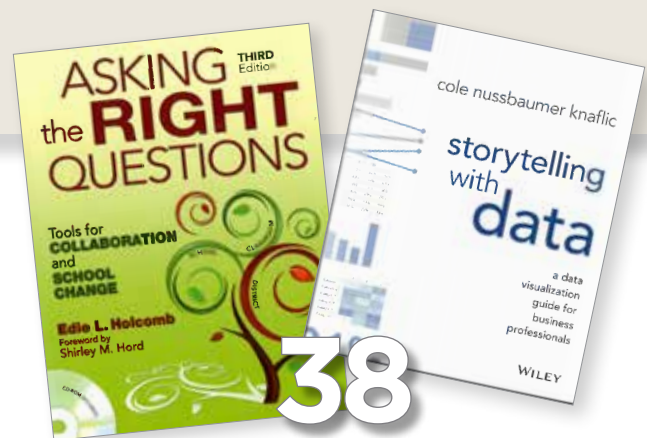
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Our Facilities Staff are at the Coronavirus Front Line

While most students, faculty, and many campus administrators are at home, properly hunkering down to minimize the spread of the coronavirus, the campus facilities staffs are reporting to work to clean, sanitize, disinfect, and maintain the built environment of our colleges, universities, and schools. It can be an exhausting, satisfying, and terrifying experience, all at the same time.

Everyone is doing their parts to keep their communities, campuses, and homes as safe and healthy as possible and to “flatten the curve” of the virus spread, which, as of this writing, is still on an upward trajectory. Our families, coworkers, and the people whom we serve and come in contact with all need to be protected, and we need to take care of ourselves as well.

While APPA staff are not on the front lines of your campus work, our service has been to create, compile, and vet resources and connections related to COVID-19 and share them with you in a number of ways. First, we have created a **Resource page** that captures content developed by staff, APPA members, and guidance from federal agencies and colleague education associations. Be sure to bookmark us at <https://www.appa.org/covid-19-resources-and-guidelines>.

Second, we are hosting **weekly Town Hall webcasts** that meet every Friday from 12:30 – 2:00 p.m. Eastern time. Each session has exceeded 1,100 attendees, so we know we’re meeting a need among APPA’s members. Each Town Hall includes important announcements and introductions by APPA’s Executive Vice President Lander Medlin, as well as panelists comprising members on the front line and experts from other fields. We record each Town Hall and post it on our Resources page. You can register for upcoming APPA Town Halls at <https://register.gotowebinar.com/rt/2278725060047516427>.

A valuable outcome of the APPA Town Hall is a plethora of questions from listeners, and we strive to answer as many of them as we can. APPA staff consults with panelists, medical experts, business partners, and others to respond to what we call **APPA RAQs**, or recently asked questions. The updated RAQs are updated weekly, and you can view the current list at <https://www.appa.org/covid-19-raqs/>.

Another resource and tool that APPA has used was found in the results of two recent surveys: a Joint Construction Ownership survey done in collaboration with COAA (Construction Owners Association of America) and NASFA (National Association of State Facilities Administrators); and APPA’s own Survey on FM and Construction COVID-19 Campus Procedures. We’ve developed an informative infographic as well as summary responses and the full complement of survey results for your review. The surveys brought nearly a thousand responses from campus facilities and construction professionals in a short period of time. To check out the construction-related survey results, visit <https://www.appa.org/construction-survey-responses/> in URL here.

We have many times heard and said the phrase “We’ll get through this together,” and APPA takes that statement seriously. Join us on a Town Hall, read our RAQs and Resource material, and be sure to send us your own guidelines, campus reports, and emerging practices during this pandemic to share with others at communications@appa.org. ☎

COMING IN MAY/JUN 2020

- PDC Projects
- COVID-19 Emerging Practices

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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



APPA 2020 Annual Conference and Exposition

Boston, Massachusetts
August 1-3, 2020

Mark your calendar to attend APPA's 2020 meeting and exposition to be held in Boston! You won't want to miss this exciting gathering of fellow facilities professionals and exceptional speakers.

APPA Dues are Due

APPA has sent membership renewal invoices to all APPA members for the fiscal year April 1, 2020–March 31, 2021.

Please pay your dues promptly to keep receiving APPA's many membership benefits. For more information, contact member services at membership@appa.org. Thank you to the many member schools that have already renewed their memberships.



Candidates Announced for APPA Office – 2020-2021 – Vote by April 14

The APPA Board of Directors is pleased to announce their recommended slate of officers for the 2020-2021 elections. The Nominating Committee was led by APPA Immediate Past President Don Guckert, and comprised all six of the senior regional representatives of the APPA Board.

President-Elect

- **Dave Irvin**, *University of Tennessee – Knoxville*

Vice President for Member & Community Engagement

- **Margaret Tennesen**, *University of Wisconsin – Madison*

Voting is now open to primary/institutional representatives. Those eligible to vote will be able to do so online or via paper ballot. The online ballot will include a link to a video statement from each candidate. The ballots close at 11:59 p.m. Eastern Time on April 14, 2020.

Please note that the primary/institutional representative will have the option of having an associate member vote on their behalf via proxy (only one vote will be accepted from each institution). The associate member with proxy rights has been listed on the dues invoice.

To learn more about the candidates and to vote, go to www.appa.org/vote. If you have any questions, contact Anita Dosik at anita@appa.org or 703-542-3837.

COVID-19 – Resources and Guidelines

APPA's Resource Page: www.appa.org/covid19-resources-and-guidelines

ACHA GUIDELINES: PREPARING FOR COVID-19

The American College Health Association has prepared new guidelines to help college health staff and campus administrators prepare for coronavirus disease 2019 (COVID-19) and related issues on their campuses. The guidelines are intentionally broad so that each institution, small or large, can modify them based on existing campus and local resources. Moreover, each institution should seek guidance and coordination from their local and state public health agencies. Please keep in mind that the situation is rapidly evolving. Additional information about COVID-19 is available and consistently updated from the following sources:

- U.S. Centers for Disease Control and Prevention (CDC)
- World Health Organization (WHO)
- National Institute of Allergy and Infectious Diseases (NIAID)
- American College Health Association (ACHA)

VIEW THE ACHA GUIDELINES

OTHER RESOURCES

- Interim Guidance for Administrators of U.S. Institutions of Higher Education (IHE) to Plan, Prepare, and Respond to Coronavirus Disease 2019 (CDC document)
- Coronavirus: Prevention and Control for the Cleaning Industry (ISSA document)
- ASHRAE COVID-19 Preparedness Resources
- What Should HR Professionals Know About the Novel Coronavirus Outbreak? (CUPA-HR article)
- Coronavirus "Get Ready" Fact Sheet (American Public Health Association)
- Lead Your Business through the Coronavirus Crisis (Harvard Business Review)

SHARE YOUR BEST PRACTICES

If your facilities organization has a procedure, guideline, case study, or best practice related to fighting or minimizing the spread of COVID-19, please send your document or web link and a short description to communications@appa.org. We will share your work with fellow educational facilities professionals.

APPA Events

Jun 1-5, 2020

APPA's Supervisor's Toolkit,
Memphis, TN

Jun 15-19, 2020

APPA's Supervisor's Toolkit,
Atlanta, GA

Jun 22-26, 2020

APPA's Supervisor's Toolkit,
Charleston, SC

Jul 13-17, 2020

APPA's Supervisor's Toolkit,
Boone, NC

Aug 1-3, 2020

APPA's Annual Conference,
Boston, MA

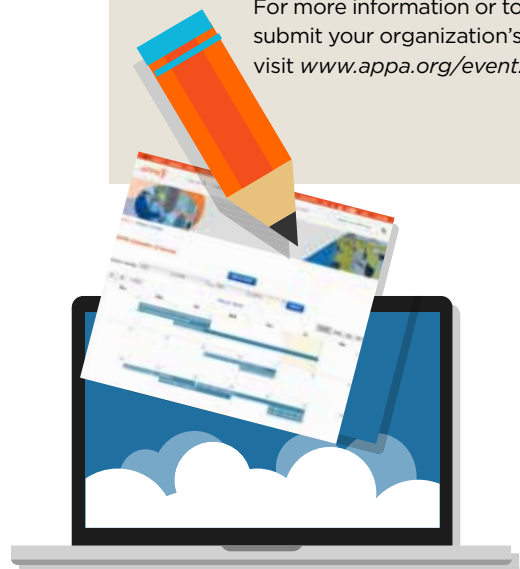
Sep 13-17, 2020

Institute for Facilities Management,
Pittsburgh, PA

Sep 15-17, 2020

Leadership Academy,
Pittsburgh, PA

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



Submit Your Own Event on the APPA Online Calendar

APPA maintains a calendar of events taking place in your region or chapter, as well as other events focused on educational facilities. You can view the calendar at <http://www.appa.org/calendar/index.cfm>, and also add events of interest to your APPA colleagues.

Clear Beginnings; Maintaining Our Future (20/20)

By Mark Duclos



Many of us have gotten to the point in our lives where we reminisce about days gone by and lessons we have learned along the way—and those we wish we had learned sooner. We have all heard the adage, “I wish I knew then what I know now.” This one applies to all of us!

As an APPA member working in higher education, I recently found a blind spot in my own approach to supporting our membership as well as our staff, students, and community in their educational pursuits. It’s a discovery that I wish I had made long ago—that discovery is the important resources that K-12 members and their organizations can provide for all of us, regardless of our institution’s classification. It is also an area I am going to explore further this coming year.

You may ask what prompted this epiphany. It came about when I learned that the Southeastern Region APPA (SRAPPA) 2020 annual conference will be hosted by Berkeley Preparatory School in Tampa, Florida. This is the first time that a K-12 institution has hosted a SRAPPA conference, and it may very well be the first time a K-12 has hosted

any regional conferences. About 10 percent of APPA membership comprises K-12 institutions, so I decided it was time for me to learn more about them—the first being our SRAPPA host, Berkeley Preparatory School.

Founded in 1960, Berkeley Preparatory School is a pre-K through grade 12 coeducational, independent, Episcopal day school. Mike Steger is Berkeley’s facilities management director and a driving force in the school’s progress and the lead in their conference-hosting initiative. In my brief contact with Mike, I have learned that his goals and the goals of his school are very closely aligned with the goals of every one of our APPA members. I was reading through these goals when I realized that for many years, I had missed utilizing valuable resources right in my own backyard from K-12 colleagues like Mike. Take a look at a synopsis of a few of the objectives of this exemplary K-12 member institution:

- **Is COLLEGIAL.** Berkeley’s faculty take part in a professional growth process involving peer observation across the school, as well as faculty-led support and mentoring of new colleagues. Their community of professionals are invested in their own and each other’s success.
- **Is DIVERSE.** Berkeley’s faculty identify as white, black, Hispanic, Asian, Native American, Middle Eastern, and multiracial. They are committed to supporting a culturally diverse faculty and student body in an inclusive community.
- **Is FORWARD THINKING.** Berkeley’s staff enjoy a one-to-one environment and cloud-based collaboration to share with each other and the students.
- **Is NATIONALLY PROMINENT.** Members present annually at regional and national educational conferences.
- **Is SUPPORTIVE OF THEIR MISSION.** One hundred percent of the faculty and staff support the Berkeley Fund, the school’s annual giving program.

- Is WIDELY PUBLISHED. Berkeley faculty and staff are published in textbooks, professional journals, books, and articles on academic scholarship.
- Is RECOGNIZED FOR EXCELLENCE in education. Berkeley teachers are grant and scholarship recipients, serve in leadership positions for regional and national organizations, and work with colleges and universities to strengthen teacher certification and training.
- Is COMMITTED to campus life beyond the classroom. Berkeley teachers coach teams, sponsor clubs, chaperone activities, and revel in campus life.

We all have similarly oriented K-12 institutions close to our communities, and are certainly connected to them through similar objectives, goals, and interactions with APPA.

A QUICK Q&A

As part of our conversation, I asked Mike some questions that I hoped would help me better understand and promote the needs of our K-12 members, and also shine a spotlight on this important segment of our membership.

From a K-12 perspective, how does being a member of APPA help with your job?

Mike: I would offer that many if not most K-12 campuses operate much like a college or university campus does. Our organizational structures are much the same, and our goals are absolutely the same: to support the institution and its students in all their educational endeavors. The support portion of that statement has vast and varied meanings, and because of that, belonging to APPA/SRAPP/FLAPP [Florida Chapter of APPA] helps provide me and my team with the resources we need to best support our organization. We recognize that we are not an island and that we need outside resources to help us be most effective in our work supporting our schools.

What are some of the challenges that K-12 facility leaders have that higher education leaders may not have?

Mike: Again, I think many of the challenges we face in K-12 are similar to those in higher education. But if pressed for some differences, I would suspect that because many K-12s are smaller than their higher education peers, we then face [more] budget and staffing challenges, while being asked to present the best

possible facilities we can. K-12s are quite competitive with one another in their local markets, so we can ill afford to have our facilities less than stellar. Although higher education faces similar issues, simply scaled upward, the pool of prospective students for K-12s comes from a more finite area. That said, all the more reason to invest in our people through the networking and educational offerings of APPA/SRAPP/FLAPP.

Is there a strong network among the K-12 APPA members where you can exchange information?

Mike: There is a network, but unfortunately I wouldn't say it is strong. SRAPP continues to help build the network among K-12s, and I believe that Berkeley hosting the 2020 conference may help show other K-12s out there that participating in SRAPP is beneficial to our organizations just as it is to a college or university.

Tell me a little bit about your work with Berkeley and why it will make a good host for SRAPP 2020.

Mike: I joined Berkeley back in mid-2013 to manage the facilities and construction of what turned out to be a significant time of growth for the campus. One of the strategic initiatives for the campus was to help achieve "national prominence." There are many ways that can be achieved, and certainly one of them is to host national and regional conferences. Therefore, the opportunity to host SRAPP 2020 fit right into this strategic initiative. Given my years volunteering with FLAPP, I have helped put on a number of state conferences and figure this will be much the same, only with more people.

Berkeley Preparatory School is excited to be hosting the 2020 SRAPP conference. Our theme, "Clear Beginnings; Maintaining Our Future (20/20)," is a bit of a play on words for clear vision or focus (20/20) and emphasizes that formal education begins at the K-12 level.

I am hopeful my higher education APPA colleagues will continue to explore their collegial relationships with all our individual members and call on them to share and participate in providing solutions for all student-focused communities. I plan on making this one of my clear goals for 2020! ⑤

Mark Duclos is associate vice president, facilities management at Georgia College & State University in Milledgeville, GA. He can be reached at mark.duclos@gcsu.edu.

Sustainability, Fundamental Measurement

By Kris Zimmerman, M.S., CEFM, LEED AP O&M

Through comprehensive investigation of energy and natural resource consumption, a plan or set of plans can be devised for a long-term approach to energy and natural resource conservation. The ability to maintain energy and natural resources at a *Fundamental Measured* rate of consumption could be characterized as sustainable. Could we imagine a fundamental goal of increased participation in conserving the use of energy and natural resources that results in declining consumption? Can we constructively create an action plan for improving the efficiencies of energy and natural resources used by participants? Can we capture unrealized financial and environmental gains through identifying and implementing cost-efficient and cost-effective improvements?

Efforts to reduce electrical energy consumption will not only lower expenses; they can also increase potential interest in developing a directive to decisively measure energy use as part of a specific fundamental measurement approach. Consequently, the most fundamental understanding of a measurement goal could be the start of our approach.

Utility providers measure variables with utility-grade billable meters calibrated with high accuracy. For this example, note that a kilowatt-hour (kWh) and a kilowatt (kW) may seem like the same thing, but they are interrelated units of measurement. The important difference between kWh and kW is that a kWh reflects the *total amount of electricity used*, whereas a kW reflects the *rate of electricity usage*. The kWh (symbolized by an SI [International System of Units] designation) is a composite unit of energy equivalent to 1 kW of power sustained for 1 hour.

FUNDAMENTAL MEASUREMENT ANALYSIS: “THE START PART SIMPLIFIED”

A single building’s energy consumption can be analyzed to establish a baseline, point “A,” if you will consider “A” as a starting point. This is the first year

of consumption as a measured, 12-month period for this example. We normalize data as gross consumption per total gross square feet in order to fundamentally begin the “Start Part” for a specific group of personnel. This can incorporate divisions later for breakout of individual area usage by designed permanent meter or temporary metered measurement.

But first we must have a solid baseline of group understanding with variables that everyone, including trade and craft personnel in the field, can understand. Most of our building operating/renovating personnel (the select group of line managers/supervisors we use here) are not “building scientists,” and we need to share conservation information that inspires performance from their prior trade and craft personnel efforts.

Fundamental Measurement “Start Part Simplified”
Gross Variables—Electricity:

- kWhs
- Gross square feet
- Monthly expense—dollars

With such simple variables to consistently observe month to month for this group of employees, it is interesting to observe their reactions when the “light-bulb” turns on as they see the true effects of electricity conservation measures as they directly relate to their project work and the expense conserved. This is only relevant to our trade-related group here, not to formal accounting, budget, or administration processes, and the data input for this group is handled separately from those groups. However, it is affected considerably by positive results from labor production.

After reviewing trends in data and information on the energy consumption of individual buildings, a designated conservation group of reviewers may conclude that a realistic 1 to 2 percent reduction effort in annual energy use as a goal could be successful and would be necessary to keep pace with the growing student occupancy. This reduction may be

possible by focusing on the most easily achievable conservation efforts for perhaps 10 years (amounting to a 10 to 20 percent reduction per decade). Building to Leadership in Energy and Environmental Design (LEED) certification standards can be productive with the assistance of up-to-date operations and maintenance practices.

This beginning understanding of fundamental measurement is important for any university or school district educational institution, as it establishes fundamental measurement processes that may help reorganize and reprioritize projects so they result in expense-saving improvements. Once we get the conservation ball rolling, we would like to stay on the path of continued and even compounded savings annually.

Constrained capital combined with successful measurement conservation goals will ensure the effectiveness and efficiency of investments and also make certain they are given fair consideration among competing projects. An analysis can be performed to determine the financial feasibility for each potential energy-saving project, by evaluating return on

investment and net present value saved back into our energy checkbook.

POTENTIAL RESULTS EXAMPLE

While many of the potential no-cost/low-cost energy efficiency improvements recommended may have already been implemented by Management, there are significant savings available from projects requiring some capital investment. The table on page 12 lists examples of energy savings and paybacks associated with projects in various categories.

RECOMMENDATIONS

In addition to laying out potential goals as shown above, an action plan example is recommended to prioritize projects. After weighting projects by payback period and initial investment, and after discussing priorities with management for approach, the staff should adopt a timeline for achieving those goals.

Projects can be based on the greatest ROI while replacing the oldest technology or components in a system. Energy efficiency standards can assist in

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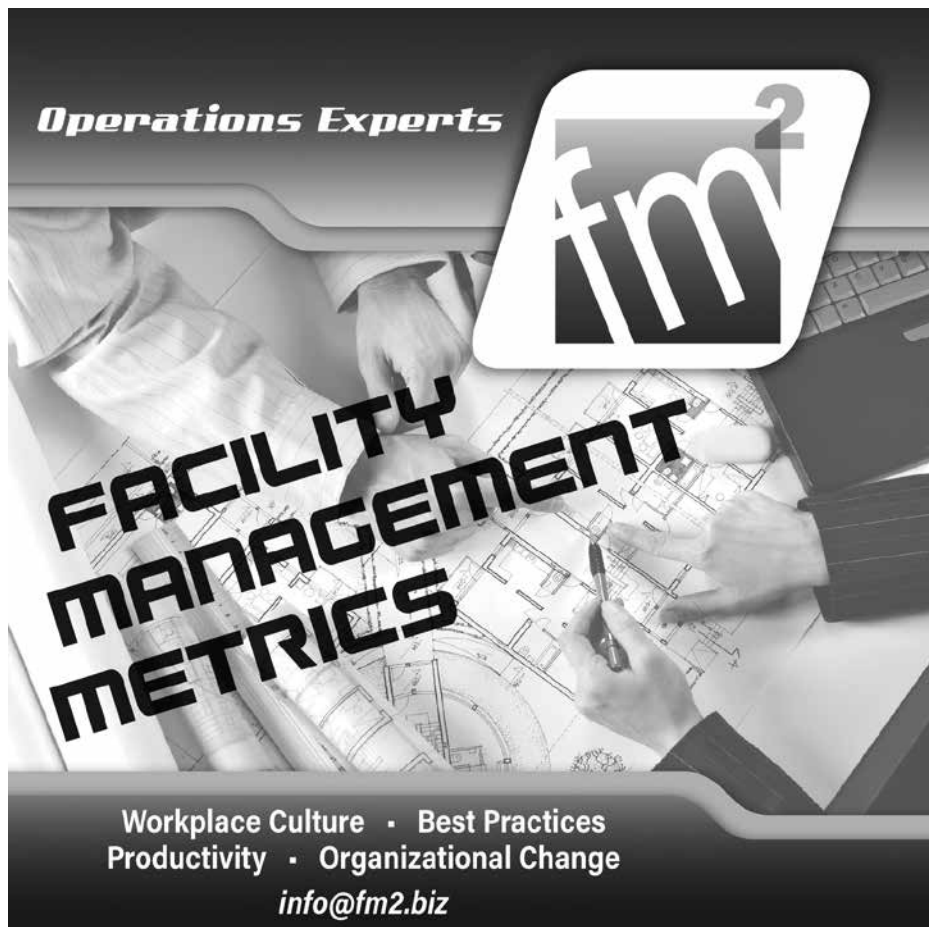


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SIMPLE PAY BACK	Project	Simple
Item	Cost, \$	Payback, Yrs
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Replace Fluorescent and Incandescent	\$350	1.5
Reduced Lighting Operating Hours	\$1,000	4.1
Install Occupancy Sensors	\$2,500	6.9
Disconnect Vending Machine Lights	\$5,000	9.7
Convert T12 to T8 Fluorescent	\$800	2.1
Convert Metal Halide to T8 or T5 Fluorescent	\$17,500	4.6
Task Lighting	\$1,000	5.7
TOTALS	\$28,198	4.9

Incentive	Simple PB
\$	w/ incentive
NA	NA
NA	NA
\$444	2.27
\$951	4.31
\$325	9.07
\$12	2.08
\$357	4.53
\$684	1.80
\$2,773	4.43

For the incentive \$, if simple payback without incentive is <2 or >10 years, there typically is no incentive.



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choosing the most successful projects. A great example of one of these standards is ANSI/ASHRAE/IES Standard 100-2015, “Energy Efficiency in Existing Buildings.” (This standard supersedes ANSI/ASHRAE/IESNA Standard 100-2006.) Management analyzes, chooses, and explains to staff the potential target and helps trade and craft staff stay focused on the goal consistently. Long-term task repetition brings long-term task accomplishment and a better understanding of the benefits of human effort in the task. We want this thinking process to be automatic—an automaticity response in human performance, learned in trade and craft repetitive labor projects. Labor repetition promotes automaticity in human thought processes, increasing the quality and efficiency of human performance. ☺

Kris Zimmerman is director, mechanical, electrical, and plumbing facilities management at the University of Houston Downtown in Houston, TX. He can be reached at zimmermank@uhd.edu. This is his first article for *Facilities Manager*.



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Excerpts from AASHE'S 2019 SUSTAINABLE CAMPUS INDEX

By Monika Urbanski

The **2019 Sustainable Campus Index (SCI)**, produced annually by the Association for the Advancement of Sustainability in Higher Education (AASHE), recognizes top-performing colleges and universities overall by institution type and in 17 sustainability impact areas, as measured by the Sustainability Tracking, Assessment & Rating System (STARS), a voluntary framework used by hundreds of colleges and universities to measure, report, and strengthen their contributions to global sustainability. The SCI also highlights innovative, high-impact initiatives from participating institutions.

This feature excerpts 10 of the 17 impact areas covered in the SCI that are of particular relevance to facilities professionals. You can download the complete report, which also covers academics, public engagement, and more, by going to <https://www.aashe.org/wp-content/uploads/2019/08/SCI-2019-Updated.pdf>.



AIR & CLIMATE

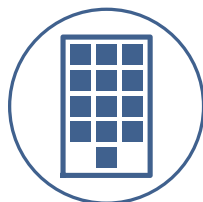


Global climate change is having myriad negative impacts throughout the world, including increased frequency and potency of extreme weather events, sea-level rise, species extinction, water shortages, declining agricultural production, and the spread of diseases. The impacts are particularly pronounced for low-income communities and countries. Institutions that inventory and take steps to reduce their air pollutant emissions can positively impact the health of their local communities and regions. This section covers greenhouse gas emissions assessment and mitigation and outdoor air quality.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1. (t)	Colby College	100%	Baccalaureate	Waterville, Maine
1. (t)	Université Laval	100%	Doctoral	Quebec City, Quebec
3.	Bowdoin College	98.5%	Baccalaureate	Brunswick, Maine
4. (t)	Thompson Rivers University	96.2%	Masters	Kamloops, British Columbia
4. (t)	University of Victoria	96.2%	Doctoral	Victoria, British Columbia
6. (t)	Lewis & Clark College	95.5%	Baccalaureate	Portland, Oregon
6. (t)	Middlebury College	95.5%	Baccalaureate	Middlebury, Vermont
8.	Bentley University	93.9%	Masters	Waltham, Massachusetts
9.	Simon Fraser University	91.6%	Doctoral	Burnaby, British Columbia
10.	Western Washington University	88.7%	Masters	Bellingham, Washington

BUILDINGS



Buildings are generally the largest user of energy and the largest source of greenhouse gas emissions on campuses. Buildings also use significant amounts of potable water. Institutions can design, build, and maintain buildings in ways that provide a safe, healthy indoor environment for inhabitants while simultaneously mitigating the buildings' impact on the outdoor environment. This section covers the maintenance and operations of existing buildings as well as new building design and construction.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	University of California Merced	64.6%	Doctoral	Merced, California
2.	University of California Irvine	63.3%	Doctoral	Irvine, California
3.	Chatham University	62.5%	Masters	Pittsburgh, Pennsylvania
4.	Nova Scotia Community College	62.3%	Associate	Dartmouth, Nova Scotia
5.	University of California Santa Barbara	59.8%	Doctoral	Santa Barbara, California
6.	California State University Sacramento	59.4%	Masters	Sacramento, California
7.	University of Wisconsin Milwaukee	59.0%	Doctoral	Milwaukee, Wisconsin
8.	University of the Pacific	58.5%	Doctoral	Stockton, California
9.	Northwestern University	57.9%	Doctoral	Evanston, Illinois
10.	Portland State University	57.8%	Doctoral	Portland, Oregon

CAMPUS ENGAGEMENT

Engaging in sustainability through co-curricular activities allows students, faculty, and staff to deepen and apply their understandings of sustainability principles. Co-curricular sustainability offerings help integrate sustainability into the campus culture and encourage behavior changes that promote sustainability. This section covers student and employee sustainability education programs and orientations, assessment of sustainability culture, outreach materials, and campaigns.



TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	Berea College	100%	Baccalaureate	Berea, Kentucky
2.	Thompson Rivers University	99.3%	Masters	Kamloops, British Columbia
3. (t)	Arizona State University	98.8%	Doctoral	Tempe, Arizona
3. (t)	Colby College	98.8%	Baccalaureate	Waterville, Maine
3. (t)	Colorado State University	98.8%	Doctoral	Fort Collins, Colorado
3. (t)	Dickinson College	98.8%	Baccalaureate	Carlisle, Pennsylvania
3. (t)	University of Connecticut	98.8%	Doctoral	Storrs, Connecticut
8. (t)	Stanford University	97.6%	Doctoral	Stanford, California
8. (t)	University of Calgary	97.6%	Doctoral	Calgary, Alberta
10.	University of New Hampshire	96.4%	Doctoral	Durham, New Hampshire

Switch to the 100% recyclable

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mattress and join the somnum Zero Landfill mattress recycling program

somnum
THE ORIGIN OF SLEEP

SUSTAINABLE MATTRESSES FOR SUSTAINABLE INITIATIVES

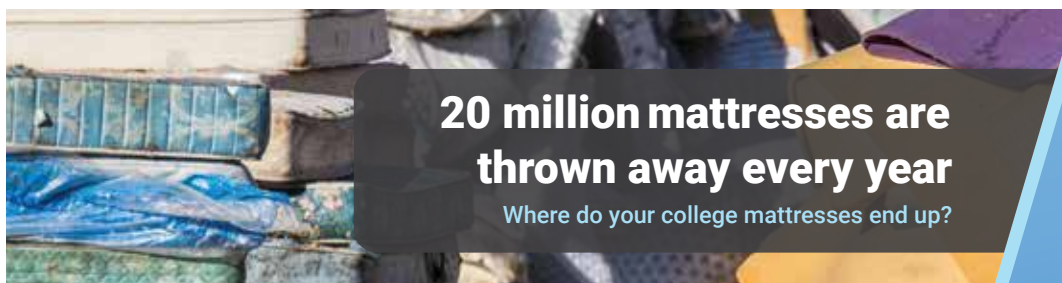
The EnviroSpring is a 100% recyclable mattress built for comfort and durability in a dormitory or collegiate housing setting. The EnviroSpring's core is constructed using a unique blend of virgin and recycled fiber and innovative cushioning solutions made from recyclable polymers. The EnviroSpring is a "dual density" mattress; featuring a *softer* side and a *firmer* side to accommodate differing sleep types.

This new mattress technology is key to our recycling process; a closed loop production process that allows us to break down previously used EnviroSpring mattresses and use the reprocessed materials to create a new EnviroSpring mattress. Not repurposing, but actually reusing all the materials for a next generation mattress!

FOR MORE INFORMATION ON THE 100% RECYCLABLE MATTRESS, PLEASE EMAIL US AT SOMNUM.INFO@LCI1.COM



ZERO
LANDFILL
mattress recycling program



20 million mattresses are thrown away every year

Where do your college mattresses end up?

See the EnviroSpring at
NAEP April 5th-8th and
ACUHO-I June 27th-30th

DIVERSITY & AFFORDABILITY

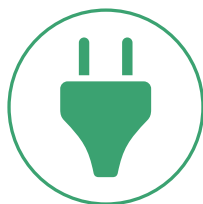


Higher education opens doors to opportunities that can help create a more equitable world, and must be accessible to all regardless of race, gender, religion, socioeconomic status, and other differences. A diverse body of students, faculty, and staff provides rich resources for learning and collaboration. This section covers diversity coordination, assessment for campus equity, discrimination response, higher education affordability and access, increasing faculty diversity, and support and recruitment of underrepresented students, faculty, and staff.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	Stanford University	98.7%	Doctoral	Stanford, California
2.	Rice University	97.9%	Doctoral	Houston, Texas
3.	University of Texas Rio Grande Valley	96.2%	Doctoral	Edinburg, Texas
4.	University of California Berkeley	96.1%	Doctoral	Berkeley, California
5.	Thompson Rivers University	95.4%	Masters	Kamloops, British Columbia
6.	University of California Irvine	95.3%	Doctoral	Irvine, California
7. (t)	Emory University	95.2%	Doctoral	Atlanta, Georgia
7. (t)	University of Pennsylvania	95.2%	Doctoral	Philadelphia, Pennsylvania
9.	Washington University in St. Louis	95.1%	Doctoral	Saint Louis, Missouri
10.	Indiana University-Purdue University Indianapolis (IUPUI)	94.9%	Doctoral	Indianapolis, Indiana

ENERGY



For most institutions, energy consumption is the largest source of greenhouse gas emissions. Implementing conservation measures and switching to renewable sources of energy can help institutions save money and protect them from utility-rate volatility. Renewable energy may be generated locally and allow campuses to support local economic development. Furthermore, institutions can help shape markets by creating demand for cleaner, renewable sources of energy. This section recognizes energy reduction and development and use of clean, renewable energy sources.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	Thompson Rivers University	83.5%	Masters	Kamloops, British Columbia
2.	Stanford University	73.7%	Doctoral	Stanford, California
3.	American University	71.0%	Doctoral	Washington, D.C.
4. (t)	University of New Hampshire	69.7%	Doctoral	Durham, New Hampshire
4. (t)	University of South Florida	69.7%	Doctoral	Tampa, Florida
6.	University of Idaho	68.1%	Doctoral	Moscow, Idaho
7.	University of Ontario Institute of Technology	66.5%	Masters	Oshawa, Ontario
8.	University of Colorado Colorado Springs	66.4%	Masters	Colorado Springs, Colorado
9.	University of Vermont	68.3%	Doctoral	Burlington, Vermont
10.	College of the Atlantic	65.3%	Baccalaureate	Bar Harbor, Maine

GROUNDS

Beautiful and welcoming campus grounds can be planned, planted, and maintained in any region while minimizing the use of toxic chemicals, protecting wildlife habitat, conserving resources, and promoting organic care. This section covers campus land management, sustainable landscaping, and biodiversity of campus grounds and surrounding lands.



TOP PERFORMERS

Rank	Institution	Score	Type	Location
1. (t)	Cascadia College	100%+	Associate	Bothell, Washington
1. (t)	Chatham University	100%+	Masters	Pittsburgh, Pennsylvania
3. (t)	Antioch College	100%	Baccalaureate	Yellow Springs, Ohio
3. (t)	College of the Atlantic	100%	Baccalaureate	Bar Harbor, Maine
3. (t)	Florida State University	100%	Doctoral	Tallahassee, Florida
3. (t)	The American College of Greece	100%	Masters	Athens, Greece
3. (t)	Université de Montréal	100%	Doctoral	Montreal, Quebec
3. (t)	University of Maine	100%	Doctoral	Orono, Maine
9.	Keene State College	99.8%	Masters	Keene, New Hampshire
10.	Clarkson University	99.3%	Doctoral	Potsdam, New York



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Building Enclosure/Structural Engineering Services:

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- Roof, wall, window/glazing, waterproofing, and structural evaluations and designs
- Forensic evaluations
- Construction phase assistance
- Building enclosure commissioning (BECx)
- Enclosure design assistance and peer review for historic, LEED-certified, and green roof projects

Athletic and Recreation Facilities Design Services:

- Comprehensive athletic campus evaluation and master planning
- Athletic facilities planning, permitting, and programming
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- New track facilities, track renovations, and conversions
- All types of synthetic and natural turf fields

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TRANSPORTATION



Institutions can positively impact human and ecological health and support local economies by modeling sustainable transportation systems. Transportation-related emissions and pollutants contribute to health problems which, due to disproportionate exposure, are frequently more pronounced in low-income communities near major transportation corridors. In addition, fuel extraction, production, and distribution can damage environmentally and culturally significant ecosystems and may financially benefit oppressive governments. This section covers campus fleets, student/employee modal split, and programs promoting sustainable transportation.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	Columbia University	89.1%	Doctoral	New York, New York
2.	University of Washington	87.6%	Doctoral	Seattle, Washington
3.	University of Pennsylvania	80.6%	Doctoral	Philadelphia, Pennsylvania
4.	Emerson College	80.3%	Masters	Boston, Massachusetts
5.	Massachusetts Institute of Technology	79.7%	Doctoral	Cambridge, Massachusetts
6.	University of Ottawa	78.3%	Doctoral	Ottawa, Ontario
7. (t)	École de Technologie Supérieure	78.0%	Doctoral	Montreal, Quebec
7. (t)	University of California Irvine	78.0%	Doctoral	Irvine, California
9. (t)	Carnegie Mellon University	77.9%	Doctoral	Pittsburgh, Pennsylvania
9. (t)	Simon Fraser University	77.9%	Doctoral	Burnaby, British Columbia

WASTE



Waste reduction mitigates the need to extract virgin materials from the earth and reduces waste flow to incinerators and landfills that contaminate air and water, produce greenhouse gas emissions, and tend to have disproportionate negative impacts on low-income communities. Source reduction and waste diversion also save institutions costly landfill and hauling costs. Campaigns for waste reduction can engage the entire campus community in contributing to tangible sustainability goals. This section recognizes waste minimization and reduction construction, waste diversion, and hazardous waste management.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	New Mexico State University	92.9%	Doctoral	Las Cruces, New Mexico
2.	San Jose State University	92.8%	Masters	San Jose, California
3.	Nova Scotia Community College	89.2%	Associate	Dartmouth, Nova Scotia
4.	Thompson Rivers University	87.6%	Masters	Kamloops, British Columbia
5.	University of Massachusetts Lowell	78.1%	Doctoral	Lowell, Massachusetts
6.	Université Laval	77.1%	Doctoral	Quebec City, Quebec
7.	University College Cork- National University of Ireland, Cork	76.6%	Doctoral	Cork, Ireland
8.	California State University, Fullerton	76.2%	Doctoral	Fullerton, California
9.	University of California Santa Barbara	75.8%	Doctoral	Santa Barbara, California
10.	University of California Merced	74.3%	Doctoral	Merced, California

WATER

Water conservation and reuse, as well as effective rainwater management practices, are important in maintaining and protecting finite groundwater supplies. Pumping, delivering, and treating water is a major driver of energy consumption, so institutions can help reduce energy use and the emissions associated with energy generation by conserving water. Water conservation and effective rainwater and wastewater management also reduce the need for effluent discharge into local surface water supplies, which helps improve the health of local water ecosystems. This section covers water use reduction and rainwater management.



TOP PERFORMERS

Rank	Institution	Score	Type	Location
1. (t)	Colorado College	100%+	Baccalaureate	Colorado Springs, Colorado
1. (t)	San Francisco State University	100%+	Doctoral	San Francisco, California
1. (t)	University of Connecticut	100%+	Doctoral	Storrs, Connecticut
4. (t)	California State University Northridge	100%	Masters	Northridge, California
4. (t)	Chatham University	100%	Masters	Pittsburgh, Pennsylvania
4. (t)	Colgate University	100%	Baccalaureate	Hamilton, New York
4. (t)	Eastern Kentucky University	100%	Masters	Richmond, Kentucky
4. (t)	George Mason University	100%	Doctoral	Fairfax, Virginia
4. (t)	Loyola Marymount University	100%	Masters	Los Angeles, California
4. (t)	Muhlenberg College	100%	Baccalaureate	Allentown, Pennsylvania
4. (t)	Stanford University	100%	Doctoral	Stanford, California
4. (t)	University of Cincinnati	100%	Doctoral	Cincinnati, Ohio
4. (t)	University of Massachusetts Amherst	100%	Doctoral	Amherst, Massachusetts
4. (t)	University of Minnesota Morris	100%	Baccalaureate	Morris, Minnesota
4. (t)	University of Texas Rio Grande Valley	100%	Doctoral	Edinburg, Texas
4. (t)	Vassar College	100%	Baccalaureate	Poughkeepsie, New York

APPA'S COVID-19 Resource Page

<https://www.appa.org/covid-19-resources-and-guidelines>

- APPA Town Hall recordings
- Business Partner Resources
- Campus Emerging Practices
- Many more resources

Share your own guidelines, policies, and emerging practices.
Send to communications@appa.org

WELL-BEING & WORK



An organization's character, capacity to perform, and achievements are only as strong as that organization's community. Colleges and universities can bolster the strength of their communities by promoting the well-being of the campus community and by offering worker benefits, wages, and other assistance that serve to respectfully and ethically compensate workers. This section recognizes student and employee wellness programs and employee compensation, satisfaction, health, and safety.

TOP PERFORMERS

Rank	Institution	Score	Type	Location
1.	The American College of Greece	87.1%	Masters	Athens, Greece
2.	Stanford University	86.7%	Doctoral	Stanford, California
3.	Niagara College	86.6%	Associate	Welland, Ontario
4.	University of Ontario Institute of Technology	82.6%	Masters	Oshawa, Ontario
5.	Colorado State University	81.0%	Doctoral	Fort Collins, Colorado
6.	Gettysburg College	80.3%	Baccalaureate	Gettysburg, Pennsylvania
7.	University of California Riverside	80.0%	Doctoral	Riverside, California
8.	Lawrence University	78.6%	Baccalaureate	Appleton, Wisconsin
9.	Middlebury College	78.1%	Baccalaureate	Middlebury, Vermont
10. (t)	Colby College	77.6%	Baccalaureate	Waterville, Maine
10. (t)	Université Laval	77.6%	Doctoral	Quebec City, Quebec

OVERALL TOP PERFORMERS



Associate Colleges

Rank	Institution	Rating	Score	Location
1.	Nova Scotia Community College	Gold	73.2	Dartmouth, Nova Scotia
2.	Mohawk College	Gold	68.0	Hamilton, Ontario
3.	Portland Community College	Silver	62.0	Portland, Oregon
4.	North Seattle College	Silver	60.0	Seattle, Washington
5.	Fleming College	Silver	56.2	Peterborough, Ontario

Baccalaureate Institutions

Rank	Institution	Rating	Score	Location
1.	Colby College	Gold	83.2	Waterville, Maine
2.	Dickinson College	Gold	81.5	Carlisle, Pennsylvania
3.	Sterling College (VT)	Gold	78.3	Craftsbury Common, Vermont
4.	Middlebury College	Gold	77.6	Middlebury, Vermont
5.	College of the Atlantic	Gold	73.3	Bar Harbor, Maine

Master's Institutions

Rank	Institution	Rating	Score	Location
1.	Thompson Rivers University	Platinum	88.3	Kamloops, British Columbia
2.	Chatham University	Gold	81.3	Pittsburgh, Pennsylvania
3.	Santa Clara University	Gold	76.2	Santa Clara, California
4.	Seattle University	Gold	75.6	Seattle, Washington
5. (t)	California State University Northridge	Gold	74.3	Northridge, California
5. (t)	University of Colorado Colorado Springs	Gold	74.3	Colorado Springs, Colorado

Doctoral Institutions

Rank	Institution	Rating	Score	Location
1.	Stanford University	Platinum	88.0	Stanford, California
2.	University of California Irvine	Platinum	86.8	Irvine, California
3.	University of New Hampshire	Platinum	86.0	Durham, New Hampshire
4.	Colorado State University	Platinum	85.6	Fort Collins, Colorado
5.	University of Connecticut	Gold	84.4	Storrs, Connecticut

Monika Urbanski is AASHE's data and resources manager and can be reached at monika.urbanski@aashe.org. This is her first article for *Facilities Manager*. Excerpted with permission from the 2019 Sustainable Campus Index (<https://www.aashe.org/wp-content/uploads/2019/08/SCI-2019-Updated.pdf>), Association for the Advancement of Sustainability in Higher Education (AASHE). Thanks to Julian Dautremont, AASHE's director of programs, for his assistance with this article.



The Ellen MacArthur Foundation is championing the new circular economic model in Europe, the United States, and beyond, working across businesses, cities and governments, and educational institutions in many areas, such as plastics, food, fashion, and finance. The [Higher Education Associations Sustainability Consortium](#) (HEASC)—of which APPA is a founding member—is helping to bring information on sustainable procurement and the circular economy to higher education. HEASC is a network of higher education associations with a commitment to advancing sustainability within their constituencies and the entire system of higher education.



The current “take-make-waste” linear economy needs to be transformed. The circular economy offers a framework for change that is based on three key principles:

- designing out waste and pollution,
- keeping products and materials in use, and
- regenerating natural systems.

As organizations mature in their circular economy journey, there is increasing discussion on the role of procurement and the supply chain. Companies such as [Renault](#) have developed their own closed-loop supply chains to ensure a stable, cost-competitive supply of recycled plastic. This ability to influence and create circular supply chains is not just limited to the automotive industry.

The Ellen MacArthur Foundation’s “[toolkit for policymakers](#)” has a dedicated chapter on public procurement, which has multiple synergies for those in the higher education sector. University campuses wield large purchasing power and can significantly influence their supply chains in the same ways. There is a range of resources available to help support the transition to a circular procurement model, and links to many of these are included below.

Following are five key ways in which your institution’s procurement choices can influence the transition to a circular economy:

1. Use your new campus project as a research base or testbed for new circular economy models, products, or services.
 - *Arizona State University has worked with the City of Phoenix on the [RISN \(Resource Innovation and Solutions Network\) project](#), which has seen the creation of 16 new companies and 74 jobs, and stimulated changes in the local economy that provide more circular business solutions in the supply chain.*
2. Put circular procurement policies in place at the highest possible level within the university.
 - *The City of Toronto established a cross-divisional [Circular Economy Working Group](#) to apply circular economy principles to the city’s procurement processes. Could you convene a cross-departmental/school group to achieve this result?*

3. Use circular economy criteria in the maintenance, renovation, or development of all campus buildings and landscape.
 - *Ensure suppliers hold a registry of building materials and components so that value can be captured and reuse is made possible.*
 - *Use cradle-to-cradle (C2C) principles when designing new buildings or retrofitting. [Venlo City Hall](#) in The Netherlands is a good case study of how this can be accomplished.*
4. Use circular economy criteria when tendering new contracts.
 - *Use onsite anaerobic digesters as part of your new waste management contract, with the digestate being used to fertilize gardens or even food growing projects.*
 - *Employ reusable canteen containers and cutlery systems in preference to recycling systems.*
5. Use your procurement to stimulate the transition to new business models.
 - *Do you need to buy new furniture? Could you lease it instead? Product-as-a-service is a viable circular economic business model.*

The following resources are useful reading and can be utilized to support university procurement policies:

- [REBus \(Resource Efficient Business Model\) case studies](#) include a [guide for circular procurement](#) and suppliers. REBus is a project funded by LIFE+, the European Union’s funding instrument for environmental action.
- Case Study: C2C carpets for buildings in San Francisco.
- [The Green Deal](#) in the Netherlands provides a good [case study library](#) of public procurement for a circular economy. This government program furnishes advice on regulation, administration, financing, and in some cases amendments to regulations, while facilitating the involvement of key stakeholders. The government has managed to stimulate economic activity from the ground up without offering any further financial incentives. [Here you can find a review](#) summarizing three years of the Green Deal on Circular Procurement.

- In spring 2020, a dedicated deep dive on procurement and supply-chain management will be released as part of the Ellen MacArthur Foundation's Learning Hub.
- The [Sustainable Purchasing Leadership Council](#) has many additional resources.
- Look for an upcoming webinar and workshop from HEASC on this topic for APPA members (www.aashe.org/heasc).
- Remember the importance of shifting from fossil fuels and moving to energy efficiency and renewable energies to diminish the worst impacts of climate change and reduce volatile energy costs. See how this can be a cost-effective transition for all energy usage, according to a [newly released study](#).
- Many students feel despondent about the environment and may show up at your door, requesting more change. When students ask for more action on reducing the use of fossil fuels, you can help them get involved in state-level energy policies by sharing the resources developed by HEASC's initiative "Beyond Doom and Gloom: Engage in Climate Solutions." You and/or the students and other staff can participate in HEASC's [Sustainability Policy Partners network](#). Over 90 campuses in 33 states are already involved. 🐷

HEASC

The Higher Education Associations Sustainability Consortium (HEASC) is a network of higher education associations with a commitment to advancing sustainability within their constituencies and the entire system of higher education. HEASC was formed in December 2005 by leaders of several higher education associations to support and enhance the capacity of higher education to fulfill its unique and critical role in creating a healthy, just, and sustainable future. Members recognize that fulfilling their mission in the 21st century requires a broader, systemic, collaborative approach to their own work and that of the constituents they serve. Members meet on a quarterly basis by phone and once a year in person to collaborate, share best practices, and initiate new ideas to advance sustainability. AASHE (Association for the Advancement of Sustainability in Higher Education) serves as the coordinating body for HEASC.

Debra Rowe is president of the U.S. Partnership for Education for Sustainable Development and advisor and program director for the Higher Education Associations Sustainability Consortium. She can be reached at debrarowe@aya.yale.edu. Reniera O'Donnell is the higher education lead at the Ellen MacArthur Foundation and can be reached at reniera.odonnell@ellenmacarthurfoundation.org. This is her first article for *Facilities Manager*.

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Tracking and Sharing Project Impacts with GRITS

By Aaron Karp

The Sustainable Endowments Institute (SEI) is excited to mark the fifth anniversary of its partnership with APPA, through which APPA member institutions gain access to a free version of SEI's GRITS platform.

This project-management tool is used by over 800 colleges, universities, and other organizations to facilitate the work of facilities, energy, and sustainability professionals. GRITS allows users to replace spreadsheets with a secure, web-based platform that calculates project-level energy, financial, and carbon emissions savings as well as metrics like payback period, return on investment, and net present value. This business-case analysis helps professionals evaluate opportunities and drive investment in sustainability projects.

The platform also helps users share the impact of their work with stakeholders. The Reports feature enables users to generate graphs that illustrate project savings and cash flows over time or combine multiple charts into extensive progress statements. Users can embed a GRITS public dashboard in their sustainability

webpage to communicate up-to-date achievements. The GRITS Project Library allows users to view and benchmark against over 3,000 completed projects from other institutions, and it sparks learning through a new user-to-user contact feature (more below).

GRITS quantifies the impact of the work undertaken by APPA member institutions. Consider these statistics:

- 321 APPA member institutions currently accessing GRITS
- 1,595 completed projects entered by APPA member institutions
- Total-to-date financial savings: \$881 million
- Total-to-date energy savings: 18.7 million MMBTUs
- Total-to-date emissions savings: 1.8 million metric tons CO₂e (carbon dioxide equivalent)
- Total project investment: \$165 million
- Median annual financial savings: \$3,500
- Median payback period: 3.1 years
- Median annual return on investment: 20.1%

Dashboard

Projects

Facilities

Library

People

Reports

Filters

Institutions

Select (140-142)

Location

Select (101-103)

Project Types

Select (110-112)

Facility Types

Select (141-142)

Cost (\$)

\$240

\$2,234

\$240 - \$2,234

Payback Period

0-10 yrs

10-20 yrs

0-10 yrs - 10-20 yrs

Affiliations

Select all

Resource Type

Select all

Attachments

Select all

Institution Sector

Select all

Institution Type

Select all

3,014 Projects

Search

Missions Achieved by Projected

Gross

\$12,954

Net

4.9 years

Average ROI

15.5%

Payback Period

3.5 years

Lifetime

15.0 years

Average Emissions

28 MTCO₂e

Average Emissions

200 TONS

Average Net

578,671 L

Average Net

20,435 LBS

Note: Median savings are calculated based on only projects with reported savings. Modify the calculations on this page by changing your statistic settings (HERE)

Note: Aggregate financial statistics on this page correct monetarization and savings from projects with different currencies to your institution's currency (United States Dollar). These numbers will fluctuate slightly as the exchange rates between currencies change.

Table

Map

Actual vs. Projected

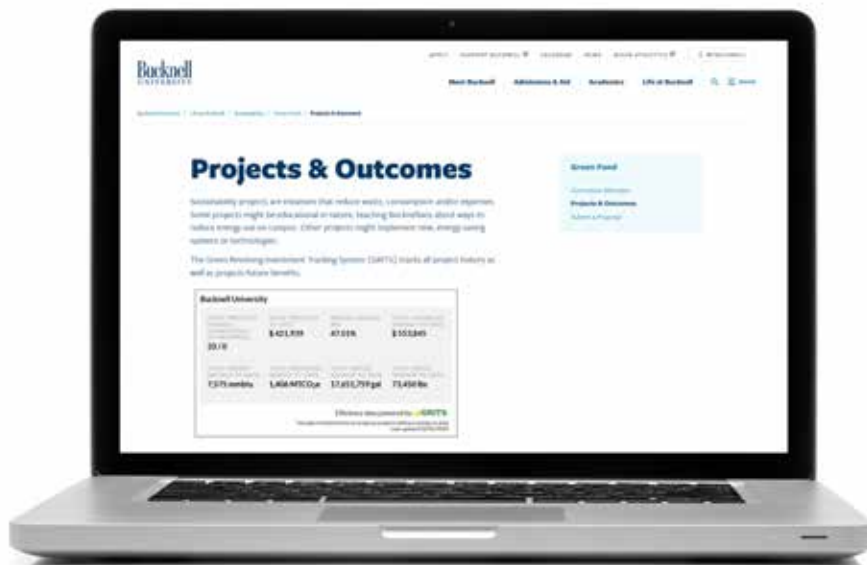
Annual Savings

PROJECT & INSTITUTION	TYPE	COST	ANNUAL ROI	PAYBACK PERIOD	EMISSIONS RATE (CO ₂ E)	ENERGY (KWH/HR)	WATER (GAL)	WASTEWATER (GAL)
10 Building Lighting City of Madison	Lighting	\$149,900	20.9%	3.8	59	441	0	0
"Exterior Night City LED Lighting" California State University Los Angeles	Lighting	\$89,488	5.7%	9.4	19	234	0	0
TCOM 19-Gig Services Carleton College	Lighting	\$1,545	0.5%	54.2	4	15	0	0

Macalester College created its first energy manager position in 2015. But after taking on the role, Mike Pumroy found that

there was no central repository of project information. When he started, he would find snippets of previous work history—handwritten lists of projects, operation and maintenance manuals, and rebate summaries. But without the full picture, it was difficult to do his job properly. That changed when Macalester started using GRITS three years ago, and since then the platform has become an integral part of Pumroy's work. The College now has a well-organized database of projects, a record of Pumroy's calculations that he and others can always revisit, and a "virtual

FIGURE 2: The GRITS Public Dashboard, as set up by Bucknell University



SOURCE: <https://www.bucknell.edu/life-bucknell/sustainability/green-fund/projects-outcomes>

file cabinet” of photos and engineering reports. He uses the Public Dashboard to help tell the College’s energy efficiency story, and has enjoyed seeing this body of work evolve over time as more projects are entered.

Dom McGraw, the Efficiency and Projects Manager at the City of Philadelphia, oversees the energy portfolio for hundreds of municipal buildings. With clear energy and carbon reduction goals established by the city’s energy master plan, McGraw’s job is to focus on energy efficiency and show the progress towards these targets. The energy office previously relied on a shared Excel spreadsheet, having to monitor the edits made by different people and prevent accidental deletion of important functions. And the city’s EnergyCAP account, which it uses to track its utility data, couldn’t follow individual energy efficiency projects. Incorporating GRITS allowed McGraw to centralize and secure the city’s project data, apply custom carbon emissions factors to calculate their emissions reductions with precision, and tell their own story. Seeing the financial savings achieved by an LED lighting upgrade in one of Philadelphia’s fire stations helped to convince the budget office to dedicate \$500,000 to additional lighting projects throughout the city. With GRITS, McGraw can easily illustrate the progress made towards Philadelphia’s energy and

carbon reduction goals since he began in his role.

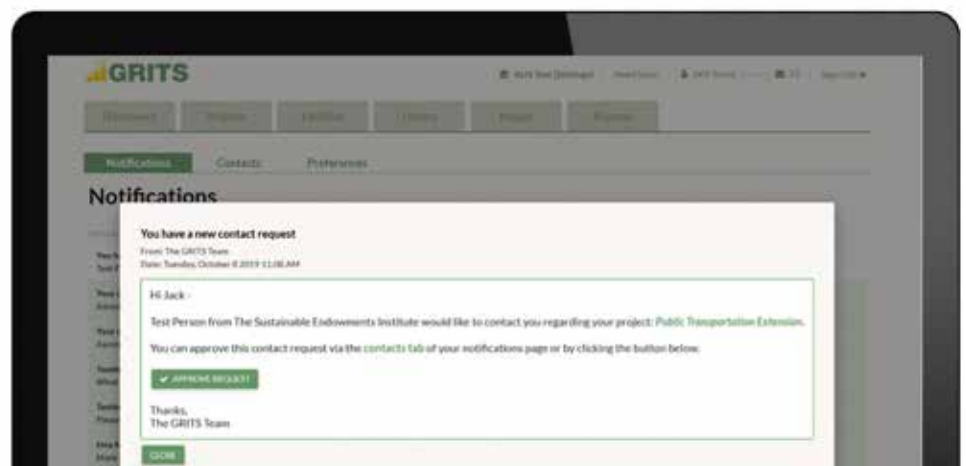
By establishing a \$9.5 million GRE, the State of Vermont’s General Assembly took a promising step towards more efficient operations across the state. But Daniel Edson, the State Energy Program Manager, remembers how quickly the energy office realized the need for a program and staff dedicated to overseeing the fund. They learned about GRITS from colleagues at Efficiency Vermont, a non-profit dedicated to reducing the state’s energy use, who assured them that GRITS would be indispensable for managing the state’s revolving fund. Edson has now used the platform for nearly six years to track project costs and GRF loan repayments. The energy office has

completed over 50 projects, investing about \$9 million and saving more than \$1 million each year. They use GRITS’ graphing feature to generate visuals of their spending and project impacts, presenting them to the governing bodies that provide project funding to meet their reporting requirements. Edson attributes part of their program’s success to the streamlined tracking of their project investments through GRITS.

GRITS 3.5

SEI is always working to improve GRITS and add new features, many of which are based on user feedback. The latest version is GRITS 3.5, developed in late 2019. Some of its newest features are:

FIGURE 3: Recovering a Connection Request through the GRITS Notification Center



- **Unlimited users for free accounts** – If you use the free version of GRITS through the APPA partnership, you can now create logins for as many members of your team as you like.
- **New user welcome email** – Now you can ensure that a new team member is aware of their GRITS access without sending them a separate message. Whenever you create a new GRITS login for a team member, you can have GRITS send them a welcome email informing them of their access and allowing them to create a custom password.
- **Clone projects** – If you're planning to enter a project similar to one you've already added, or simply wish to save time in the data entry process for your next project, you can now create a copy of any project in your account in seconds.
- **Historical emissions factors** – GRITS now incorporates electricity emissions factors from past years when that data is available, so that your project's carbon savings are derived from the factor for each individual year of its lifespan. This leads to a more accurate lifetime carbon-savings calculation.

The most significant feature added in GRITS 3.5 is the *Notification Center*. In the past, users could only learn on their own by viewing projects completed by others in the Library. The new Notification Center in GRITS allows you to connect directly with other users to dig into the details—the contractors, vendors, and specific challenges involved with the project.

When viewing another institution's Project Detail page from the Library, you'll see a "Request Contact" button that allows you to send a connection request to the project lead at that institution. If the request is accepted, GRITS will connect you with your counterpart via email, and from there you can discuss their experience with that project. With new connections to your peers, you can gain valuable insight and avoid reinventing the wheel.

LOOKING AHEAD

Some institutions make investments in energy efficiency or renewable energy outside of an overarching plan, but they could get more done with specific medium- and long-term goals in mind. Other institutions draft climate action plans that establish a target date for carbon neutrality, but they lack the means to systematically identify potential pathways that will allow them to reach their target. As a result, these plans may go unfulfilled.

These challenges will be addressed through the largest single expansion of GRITS' capabilities since its launch on Earth Day 2014. A new suite of features called "GRITS Goals" will empower users to develop detailed climate and sustainability action plans by assembling their projects into resource-reduction scenarios. It will combine GRITS' business-case analysis, customizable

project timelines, and dynamic charting to help map out pathways from business as usual to aggressive carbon, energy, water, waste, or cost reduction targets. It will also help optimize project sequencing and execution timelines to allow for more precise planning. GRITS Goals will measure users' progress towards their sustainability targets and include a live public dashboard that they can embed in a webpage to publicly display key progress metrics.

GRITS Goals will allow users to build carbon emissions reduction scenarios in an easy-to-understand format that will simplify collaboration between their administration, finance, sustainability, and facilities offices. It will provide decision makers with a full financial analysis displaying their upfront capital expenditures year by year and long-term financial savings generated.

Users will be able to analyze financial metrics and visual evidence to prioritize the conservation projects with the greatest economic and environmental impact. By ensuring that users' investments support the highest priority projects, institutions will increase the likelihood of achieving their targets.

GETTING STARTED

APPA member institutions have access to a free, basic version of GRITS. This version includes the platform's core project-management features (project-level calculations, whole-portfolio metrics, unlimited user logins) as well as partial (browsing) access to the Library, and will also include GRITS Goals when development is complete. It does not include access to the Reports feature and caps the number of project entries at five. However, users can also initiate a free, 30-day trial of the Unlimited version to add dozens of projects that will remain available in the free version.

Institutions can also subscribe to GRITS Unlimited—which includes all of the platform's features and unlimited project entries—at a price determined by their operating budget. APPA members also receive a 25 percent discount. Please contact us at support@gogrits.org for a price quote. 💰

Aaron Karp is GRITS director and senior research fellow at the Sustainable Endowments Institute, Boston, MA; he can be reached at aaron@endowmentinstitute.org.

Building Blocks of Culture for Facilities Management—Part IV, Publish Your Cultural Strategy

By Matt Adams, P.E.

To continue our exploration of strategy for building up culture within an organization, in partnership with the University of Chicago, we turn to building block number four, “Publish Your Cultural Strategy.” The first three building blocks we looked at were number one, Values (self-examination), number two, Strategy (selection of core values), and number three, Define Roles of Individuals and Leaders.

In this building block, we assemble all the component parts of the strategy that form a business plan or constitution for those within our organization. This document is a reference for our team, defining strategy in the form of values that we believe create engagement and success, both for the team and the overall organization.

This plan accomplishes several things: It gives us a clear vocabulary and set of terms that are easily referenced by all. It defines the actions, artifacts, and associated relationships with everyone in our 360-degree circle of influence. It presents a simple, easy-to-use template for every individual to apply to their daily work, and includes specific tools for our front-line supervision that provide evidence and experiences reinforcing our culture where it matters the most. It defines our strategy for accountability, alignment, and communication. Finally, the plan offers hiring guidance that helps the leaders and staff who will actively participate in our new culture. As with many documents in today’s organizations, the plan is “living” and is updated at least annually.

The outline for the cultural strategy is as follows:

CULTURAL CONSTITUTION

This section of our cultural strategy represents what we as an organization believe about ourselves. The way we characterize our culture is important; we define our culture based on the values we have selected for

ourselves and that we believe will create the highest level of engagement, professionalism, and community within our organization. A culture that promotes the growth, respect, and professionalism of each individual and our organization as a whole is the most productive. In one sense, the constitution establishes the basic beliefs and values our staff members can always rely on. Within it, we describe how these values were selected and exactly how we interpret values such as respect, accountability, collaboration, and others.

We select our values and define them ourselves; and we promote these definitions so that everyone understands them the same way. Change is often stressful to an organization; however, our cultural constitution expresses to everyone within our organization the basic understanding of our culture, so that our values remain the same no matter what happens.

ROLES OF INDIVIDUAL AND LEADERS

Another key to our cultural strategy is the work we have done through facilitated meetings and individual research to define the roles of individuals and leaders within our organization. This is based on a 360-degree action plan and our understanding of the “Covey Circle of Influence.”

Everyone in our organization has four basic working relationships: 1) with supervisors or leaders; 2) with those who report to them; 3) with their peers; and 4) with their customers or their organization’s customers. Their interactions with these four constituents should demonstrate and reinforce the cultural values we have selected if they are properly guided. We have defined these interactions in terms of both kinetic actions and static artifacts (evidence). In addition, we have daily, weekly, monthly, and annual activities combined with artifacts.

We recognize that it is not the “great” actions that demonstrate our value-based culture as much as the

small, everyday actions and interactions that reinforce our values. This is the harder but more important work that goes into creating our culture. Within this section of our cultural strategy, we create templates or matrices for our staff and leaders that list our relationships, artifacts, and actions in the frequency with which we intend to execute them. These are openly shared in a common format so they can be worked into a comprehensive, cohesive document.

ROLE OF CHAMPIONS

Also within this section is a description of our leaders' roles, to help us identify champions and guide them in contributing to the creation of organizational culture. It is understood that while leaders are important, they cannot create the culture by themselves, nor can individuals operating alone. Champions are identified—at least one per department—who can magnify the efforts of both leadership and individuals and provide energy and enthusiasm in promoting our value-based culture. The tools, techniques, and communication strategies made available to our champions are defined within this section, along with the expectations and reporting relationships between leadership and their respective champions.

TOOLS FOR FRONT-LINE SUPERVISION

As taught in APPA's Supervisor's Toolkit, there are several best practices involved in organizing, deploying, rewarding, and enhancing the relationship between supervisors and front-line staff. In this section, we define and evaluate current supervisory practices and examine the intention and inclusion of our cultural values within this critical relationship. Where positive examples of actions and artifacts reinforcing our cultural values can be identified, they are reinforced and promoted. Where limiting values are identified, they are removed.

We try to implement three to five specific actions and artifacts that reinforce our culture within the reporting relationship of supervisors and front-line staff. This relationship is perhaps the most important in that it encompasses the largest number of individuals within our department. For a cultural value to take hold, it must be successful within this peer group.

ACCOUNTABILITY, ALIGNMENT, AND SUSTAINMENT

An organizational culture cannot survive unless it is nurtured and sustained. To achieve this, we must build upon the previous sections of our cultural strategy and define for our organization how we—both individuals and leaders—will hold each other accountable and

how we will measure our progress. We will continue to conduct our cultural values survey and look for improvement and/or identification of limiting values. We will monitor ourselves, our leaders, and our champions. Our leaders will test our organization to verify that we are creating experiences, beliefs, actions, artifacts, and results that reinforce our cultural values. This will be measured empirically. Where there is deviation from a contributing value, we will identify this as a gap and improve our strategy to create alignment.


We recognize that without continual nurturing and growth, the culture of the organization will revert to a default culture based on strong personalities and, most likely, limiting values. Given this reality, the sustainment of our culture will require continual reinforcement through accountability and alignment.

HIRING FOR VALUES AND SUPPORT OF OUR CULTURE

An important part of our cultural strategy is the recognition that we can directly impact our culture through the people we hire. Jack Welch, formerly of General Electric, often said he would "hire for values and train for skills." Based on close collaboration with our organization's human resource department, this section addresses each component of the hiring process in the context of a potential employee's ability to embrace our cultural values. Those individuals who will not support our cultural values are not viable candidates, so it is important to screen them. But it is even more important to identify those individuals who might serve as champions for our value-based culture through their actions, beliefs, and example.

DEFINITION OF TERMS, PRACTICES, AND BELIEFS

While seemingly unnecessary, a common understanding of the new terms and definitions associated with this cultural initiative is crucial. The open communication style and interaction required to achieve our results are more difficult without a mutual understanding of basic terminology. Borrowing from APPA's practice with other published sources, it is necessary to share a well-socialized glossary of terms and their definitions in many formats. A simple and straightforward presentation must always accompany our cultural strategy publication.

Building block number four is the detailed outline of a best-practice cultural strategy; in our next column, we will explore the implementation of this strategy. 

Matt Adams is president of FM², Atlanta, GA. He can be reached at matt@fm2.biz.



Meeting by Numbers: How Data Capture is Transforming the Meeting Room

By Jay McArdle

Your institution may capture an enormous amount of data about facilities, enrollment, alumni, student retention, and so on. But, are you also capturing data from the various conference rooms, group study rooms, and collaboration rooms scattered all over your campus? If not, you may be missing significant opportunities to improve the user experience.

Meeting-room data capture has come a long way since it was first employed to track projector bulb life. The focus has shifted toward improving the user experience both inside and outside the meeting. New technological advances allow campuses to track conference technology, scheduling assistants, and the room environment itself. Data has become the foundation of the “smart” meeting room.

Tracking data within the meeting room will become

increasingly important as we look to solve the “productivity problem.” According to a recent State of the Meeting Room survey, 65 percent of meeting leaders said that less than half of their weekly meetings were productive. Only 11 percent said that three out of four meetings were productive. Those are sobering numbers.

If your campus needs to correct these productivity problems, consider the ways advanced data-capture technologies can provide solutions to your meeting-room woes—and how undergoing such an initiative can actually improve the facility itself.

SOLUTION #1: REDUCING PAIN POINTS INSIDE THE MEETING ROOM

Your users expect a certain level of technology to be available in their meeting rooms. The problem,

however, is that the more technology we install in a meeting room, the greater the chance that something will go wrong with it. In fact, our survey found that 56 percent of meeting leaders spend an average of six or more minutes troubleshooting a technology issue once it has occurred. The solution lies in the way we leverage data to monitor any deviations from standard operating procedures.

One way to learn more about these technology hiccups, and how to ultimately avoid them, is by supplementing readily available room data with sensors. We can use the application program interfaces (APIs) within individual components to determine how well these devices communicate with each other, and use sensors to monitor variables such as room temperature and room lighting. Once this data is collected, integrated software can harness this information to detect issues that arise, and either troubleshoot the problem or contact IT services directly.

Additionally, campus facilities managers can solve meeting-room problems through smoother implementation of post-meeting feedback. Quick surveys prompted by meeting-room technology can provide valuable information regarding meeting success and participant satisfaction. They can also reduce the chance that users will ignore a technical issue to avoid owning the repairs. This data can be employed by campus facilities managers to determine which rooms are most in need of improvements—and what technology is the best fit to solve the problem.

SOLUTION #2: SIMPLIFYING SCHEDULING AROUND THE MEETING ROOM

Facilities managers know that the problems with meeting rooms aren't limited to the rooms themselves. Our research discovered that 54 percent of meeting leaders agree that finding an available meeting room is a continual problem.

The solution: Implement data capture to help users better understand how rooms can be optimized. Using meeting-room data, facilities managers can track the number of occupants in each room, the prevalence of meetings, and the volume of attendees based on room size. This understanding is critical for determining whether the current room inventory is meeting campus needs, and which meeting-room sizes are most in demand.

Data can also solve the recurring problem known as "zombie rooms." Zombie rooms occur when someone schedules a reoccurring meeting, but participants repeatedly fail to attend—leaving the rooms reserved but empty week after week. Doing so pre-

vents others from using the rooms, as the scheduling tool displays the space as reserved. Room usage data allows facilities managers to track these occurrences, and the scheduling tool can automatically release these rooms back into available inventory.


SOLUTION #3: CONTRIBUTING TO A MORE SUSTAINABLE OPERATION ACROSS THE BUILDING

Meeting-room data capture doesn't just impact your users—it impacts the building as a whole. Even taking simple steps in our meeting spaces can lead to more efficient and sustainable operation.

Consider the problems faced by a night custodian. If a room went for the entirety of the previous day without occupants and was cleaned the night before, it doesn't need to be vacuumed or have its trash emptied. Without visibility into room occupancy, however, the custodian may spend extra time searching the room for trash or vacuuming clean carpet. Proper sensors and integrated software could provide the custodian a map of which rooms can be skipped, saving time and reducing energy consumption.

Data capture also helps us solve meeting-room problems that don't involve humans. For example, energy-consuming devices such as displays and projectors are occasionally left active on nights and weekends, draining energy and increasing electricity bills. By cataloging working hours and cross referencing that information with data input from occupancy sensors, smart meeting rooms can switch off unused devices and reduce energy consumption.

MEETING ROOMS ARE THE PROBLEM. DATA IS THE SOLUTION.

If you are a campus facilities manager who continually hears complaints about your meeting rooms, whether they are about the temperature or the technology, you don't need to meet those complaints with a shrug. You can leverage data-capture technology in your meeting rooms to better diagnose the problem and find the solutions that power a more efficient campus—both inside and outside the meeting room. 

Jay McArdle is vice president and chief information officer at RoomReady, and can be reached at jaymcardle@roomready.com. This is his first article for *Facilities Manager*.

Continuous Learning Continues in San Diego

By Corey Newman

APPA's February 2020 continuous learning programming class just wrapped up in San Diego, California, showcasing another successful professional development gathering of the Leadership Academy, Institute for Facilities Management, and Supervisor's Toolkit. 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 our Institute Deans: **Mary Vosevich, Chris Smeds, Lynne Finn, and Don Guckert**; our Academy faculty: **Glenn Smith, Paula Farnsworth, Shawna Code, Viron Lynch, and Matt Adams**; and our Supervisor's Toolkit facilitator: **David Patten**.

At this event, we also offered a new session called *Leading Your Facilities Organization Through an Age of Transformational Change* as well as a new offering, *Practical Implementation of APPA 1000 – Total Cost of Ownership – Parts 1 & 2*.

Throughout the week, students had opportunities to interact with experts who brought their knowledge and experience from diverse backgrounds, providing a rich environment for all attendees. Approximately 600 facilities professionals attended. As the week drew to a close, we celebrated with graduation ceremonies for the class of February 2020.

A big kudos goes 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 www.appa.org for more information on all of APPA's 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 Hale



ACADEMY GRADUATES

In alphabetical order; not all graduates are pictured

Bob Askerlund, *Salt Lake Community College*
 John Blankemeyer, *University of Pennsylvania Philadelphia*
 Timothy Branco, *Monroe Community College*
 Luis Carranza, *San Mateo County Community College District*
 Derek Crouse, *University of Kentucky*
 John Cuevas, *San Mateo County Community College District*
 Jolene Deinert, *University of Nebraska Lincoln*
 Kimberly Dyer, *Texas Christian University*
 Christopher Eichorst, *Whitworth University*
 Angela Gaines, *Southern University Law Center*
 David Garcia, *Rice University*
 Doug Gilpin, *University of Texas Austin*
 Robert Guttierrez, *San Mateo County Community College District*
 John Hopkins, *Whitman University*
 Stephen Luyendyk, *Grant MacEwan University*
 Guiseppe Marzullo, *Montclair State University*
 Glen Mathieu, *University of Connecticut*
 Gerry McGillian, *Columbia University*
 Joseph McGurn, *Franciscan University of Steubenville*
 Chris Miller, *Clemson University*
 Antonio Moore, *University of North Carolina Greensboro*
 Heather Neufeld, *University of Saskatchewan*
 Christopher O'Grady, *University of Saskatchewan*
 Drew Petrie, *Okanagan College*
 Kristin Poldemann, *The Ohio State University*
 Steve Robinson, *Okanagan College*
 Preya Sanasie, *Montclair State University*
 Lorraine Silva, *New Mexico State University*
 Justin Smith, *Abilene Christian University*
 Courtney Sprague, *Monroe Community College*
 Doug Tammen, *University of Virginia*

INSTITUTE GRADUATES

In alphabetical order; not all graduates are pictured

Gilbert Acosta, *University of Texas Austin*
 Scott Allen, *The Morton Arboretum*
 Jacqueline Alvarez, *Montclair State University*
 Matt Bromander, *Calvary Lutheran Church*
 Timothy Brunner, *Kansas State University*
 Jackie Bucheck, *Florida State University*
 TallChief Comet, *Humboldt State University*
 David Cooper, *North Dakota State College of Science*
 Todd Cross, *Oregon State University*
 Kyle Daniel, *University of West Georgia*
 Randy Davis, *Humboldt State University*
 Carlos Doolittle, *Southeastern Louisiana University*
 Dennis Drymala, *University of Maryland Baltimore*
 Bradley Fuller, *Kellogg Community College*
 Jeffrey K. Gaither, *Wake Forest University*
 Michael Gieger, *University of Colorado Denver Anschutz Medical Campus*
 Matt Ginn, *Saint Mary's College of California*
 Adam Gragg, *University of Virginia*
 Kathy Grant, *Indiana University Bloomington*
 Matthew Gulbicki, *Jefferson University*
 James Hackman, *University of Iowa*
 Jeff Harney, *University of Iowa*
 Jennifer Hayward, *Lane Community College*
 Paul F. Heliseva, *Cornell University*
 James Joyner, *University of Virginia*
 Sean J. Kenny, *University of Guelph*
 David King, *Western Carolina University*
 Mike L. Kirkpatrick, *University of Arizona*
 James Lang, *University of Vermont*
 Robert Luce, *University of Cincinnati*
 Mark Lutkenhoff, *Michigan State University*
 Derk Mahoney, *University of British Columbia Okanagan*
 Michael McCord, *University of New Mexico*
 Yevgeny Mironenko, *University of Arizona*
 Cary Morris, *Portland State University*
 Earl Morris, *University of Kentucky*
 Luke L. Muirhead, *University of Saskatchewan*
 Jason Murphy, *University of Kentucky*
 David J. Mutscheller, *Virginia Theological Seminary*
 Ravish Paul, *University of Florida*
 Trisha Pugh, *University of Northern Iowa*
 Richard Reardon, *State University of NY at Buffalo*
 Craig Roncace, *University of Pennsylvania Philadelphia*
 Craig Roose, *Central College*
 Katie Rossmann, *University of Iowa*
 Michael Roth, *Penn State Harrisburg*
 Christopher Sawicki, *University of Regina*
 Kevin Schindlebeck, *The Ohio State University*
 Nick Schmidt, *Western Michigan University*
 Darrell Schreiber, *North Dakota State College of Science*
 Ashley Sisco, *University of North Carolina Charlotte*
 April Skurka, *John Carroll University*
 Bryan D. Smith, *University of Cincinnati*
 Sid Stone, *University of North Carolina Chapel Hill*
 Marvin Sutton, *Davidson College*
 Kathleen Szweda, *University of Rochester*
 Jay Taylor, *Indiana University Bloomington*
 Roberta Tinchler, *University of Kentucky*
 Wesley E. Todd, *Wake Forest University*
 Aaron W. Voyles, *University of Texas Austin*
 Jennifer Watson, *University of Virginia*
 Gary Weishaar, *Kansas State University*
 William Wilcox, *Cornell University*
 Mike L. Wilkinson, *Dalhousie University*
 Brenda M. Wunder, *Middle Tennessee State University*

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

It's budgeting time for facilities officers. What will the next fiscal year look like and how will strategic plans get implemented and coordinated with others? While the pressure to get plans ready may seem too intense to allow time for extra reading, here are two books that should be considered nevertheless. They can be used together or individually to weave through the complexities of annual and multiyear plans.

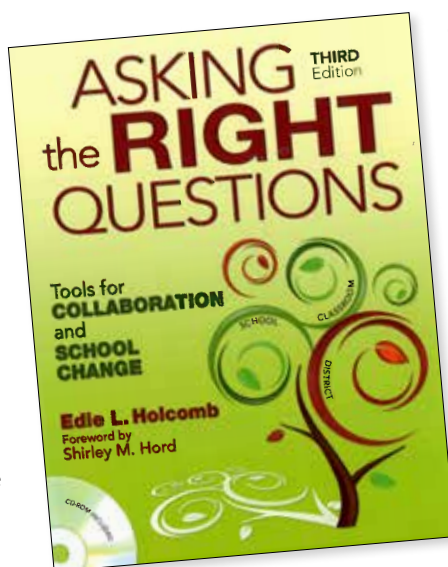
ASKING THE RIGHT QUESTIONS: TOOLS FOR COLLABORATION AND SCHOOL CHANGE, 3RD ED.

Corwin Press/SAGE, Thousand Oaks, CA, Edie L. Holcomb, 2009, 200 pp., softcover with CD-ROM (\$38).

Facilities officers recognize that they deliver a service to the community where they work. Forward-looking facilities officers recognize they need key performance indicators (KPIs) that help them identify whether the services they deliver are moving in the right direction. However, they are challenged by customers who frequently have difficulty identifying what is important for them to receive from the facilities organization. For example, my personal experience at one campus was frustrating because the provost refused to identify which facilities should be prioritized for capital renewal. This personal experience isn't unique—tools are needed.

If there are people who would like metrics to demonstrate that the educational mission is being served by the facilities organization, but need help developing the KPIs, they can find one tool in *Asking the Right Questions*. While the book is not written specifically for facilities, it is written for the education market, to help education administrators identify areas for improvement and the measures to track them. That's what facilities officers need, a tool to develop their plans and KPIs.

The tools presented in *Asking the Right Questions* help identify areas of concern and the measures necessary for improvement; they are applicable to any



organization. Getting past the instructional focus may be difficult for some readers; but once that's done, the book provides steps that can be applied to almost any organization. As an example, when APPA gathers experts to tackle its annual Thought Leaders Series topic, one can observe similar tools being used. (Oops, the secret is out!)

Techniques such as brainstorming, prioritizing, focusing, and measuring are all aimed at answering five basic questions: 1) Where are we now? 2) Where do we want to go? 3) How will we get there? 4) How will we know

we are there? and 5) How can we keep it going? These are all important questions to ask; the questions won't change but the answers will, as dedicated people work to improve service delivery. That's the goal for forward-looking facilities officers.

The accompanying CD-ROM contains key portions of the book's text and figures plus editable forms of important figures/diagrams to be used in groups that are looking to ask the right questions. Once a person masters the process described in *Asking the Right Questions*, the tools on the CD make it possible to lead multiple teams through the process. Thus, the book with accompanying CD can become a very useful tool.

STORYTELLING WITH DATA: A DATA VISUALIZATION GUIDE FOR BUSINESS PROFESSIONALS

Cole Nussbaumer Knaflic, Wiley, Hoboken, NJ, 2015, 250 pp., softcover (\$21).

Despite the crush of their many activities, facilities officers work with huge amounts of data every day. Much of the data they use is condensed to KPIs or other metrics that make the flood of data manageable or measurable. While some facilities officers can look at a table filled with numbers and extract what is important at a glance, others cannot. More importantly, when it comes to explaining the data to others outside the facilities organization, the numbers are meaningless unless they are presented in an informative and meaningful fashion. But how can that be done?

Most have heard of the “elevator speech,” that 30 to 60 seconds you have to tell a compelling story or sell yourself. Colleges and universities include the elevator speech in at least one assignment on communications or leadership, because business runs at a fast pace. There’s a limited time to get your point across before the listener moves on to the next topic (or floor). With some graphical support, the elevator speech provides more information faster, especially if the graphics are effective. That’s the focus of *Storytelling with Data*.

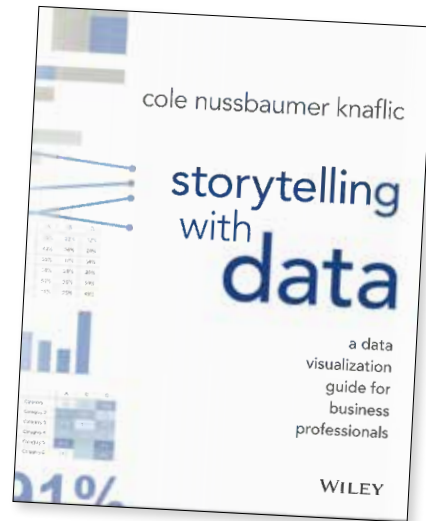
Storytelling with Data is written like a story (but it’s not revealed until near the end). There’s the set-up, the dilemma, and the resolution. Without picking on a software package, the author explains why fancier is not better. Just as in an elevator speech, the graphics can’t be cluttered or complicated. The human eye and brain move from point to point

and focus on things based on recognized patterns. Understanding those behaviors and connections can lead to better, more informative graphics.

To supplement the elevator speech properly, the graphics must be organized and highlighted, as one graph or picture may not tell the story without creating confusion. As we see in printed matter, presenting the reader with lots of different fonts on the page has the same effect as using too much color or line types in a graph; the reader focuses on the different elements rather than the desired message. KISS is a great principle to remember in the elevator speech and graphics.

As with most good stories, *Storytelling with Data* has a happy ending. That nasty software with all the features that create

bad graphical information can be harnessed to create good graphical information. The process is described clearly, in a step-by-step manner that will help the facilities officer present complex data in a compelling way. Paired with other tools that help generate and/or reduce the data you need, *Storytelling with Data* is an essential resource. 📖



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.



new products

Compiled by Gerry Van Treeck



MADISON CHEMICAL introduces MADISON GREEN, a mildly alkaline, environmentally friendly, biodegradable general-purpose cleaner that is highly effective on greasy and waxy soils, such as floors, work benches, and other equipment. This free-rinsing product does not leave a white alkaline film on the cleaned surface and has a pleasant wintergreen odor. It is safe for use on all ferrous, zinc, aluminum, and brass alloys when used as directed. Ideal for immersion, manual spray-and-rinse, or manual spray-and-wipe methods, at concentrations from 5 percent by volume with water of any temperature, to full strength. Some applications may provide better results when followed by a water rinse. For additional detailed information on Madison Chemical visit www.madchem.com.

VANAIR MANUFACTURING continues its commitment to engineering innovative mobile power solutions with the launch of the Vanair Total Electronic Control (V-TEC). The all-new V-TEC provides infinite variable speed control with clear, intuitive operation for air-compressor and generator underdeck systems. Utilizing exclusive Vanair technology, the V-TEC manages engine speed relative to compressor demand to reduce fuel consumption, noise, and wear and tear on the engine. It also maintains precise engine speed in generator mode to ensure proper hertz. Another exclusive feature of the new V-TEC is the built-in torque management provision that allows for a controlled ramp rate, which eliminates high torque spikes at startup. This feature ensures a smooth and soft power takeoff (PTO) engagement, thereby protecting the underdeck system, PTO, and auxiliary driveline. For more information about Vanair Manufacturing visit www.vanair.com.



OXY-GEN POWERED recently unveiled TerminOdor, an odor-eliminating spray. TerminOdor harnesses the power of the company's proprietary malodor eliminator, Neutra-lox, to quickly neutralize odor molecules rather than mask them. TerminOdor is ideal for a variety of environments, including offices, hotels, hospitals, schools, fitness centers, and more. Available in 22-oz. spray bottles—sold individually or in cases of six—TerminOdor features a pleasant, lemongrass fragrance and instantly eliminates odors caused by urine, feces, body odor, pets, cooking, tobacco, mold, and mildew. Malodor molecules don't stand a chance against Neutra-lox, the built-in odor-eliminating agent. For instant freshness, users simply spray TerminOdor into the air. For additional information go to Oxy-Gen Powered online at www.oxygenpowered.com.



SOFIDEL has launched two Papernet brand products. The small core toilet tissue and Ready Table interfolded napkins contribute to waste reduction and, as a result, greater environmental stewardship. Small core toilet tissue and Ready Table interfolded napkins reduce facilities' carbon footprints by reducing waste. The new small core tissue limits waste by allowing more paper to fit in a smaller roll—each roll holds more than eight rolls of conventional toilet paper. In addition to helping businesses minimize waste, small core rolls allow for more effective packaging, logistics, and storage. Ready Table interfolded napkins, designed for foodservice operations, are made from 100 percent virgin fibers and are folded using a special technique that provides greater absorption to curb paper waste. Papernet also offers unique, colorful, dishwasher-safe dispensers for Ready Table napkins. For more information on Sofidel visit www.papernet.com/americas.

WORKSAVER, INC. Introduces its new electric grapple for subcompact tractors (up to 32 hp) equipped with loaders, to handle debris, brush, limbs,



orchard prunings, and more. As the grapple is electric, no auxiliary hydraulics are required to operate the grapple clamp. An industrial-duty 12-V linear actuator with an 8-in. stroke operates the grapple clamp. The grapple is supplied with a wiring harness for direct connection to the tractor's battery, and a prewired rocker switch controls the grapple's linear actuator. The 28.5-in.-wide single upper grapple and lower 49-in.-wide rake have tines made from 3/8-in. material. Both the upper grapple and lower rake feature gripping notches to help retain loose materials.

The ESCG-48S model is designed for loaders with the "universal" skid steer quick attach system. The ESCG-48JD model is for loaders that use the John Deere hook and pin-type quick attach mount, allowing the operator to easily change from the bucket to the grapple. For more information, please visit Worksaver, Inc. at www.worksaver.com.



addition of embroidery as a customization option. VSafety has been successfully offering a vast range of customizable hi-vis clothing and personal protective equipment since its launch. The latest addition of a much larger general workwear collection from well-known clothing brands including Gildan, Regatta, Fruit of the Loom, and Portwest, as well as the introduction of embroidery as a customization option, fills the gaps in the company's workwear portfolio. This allows customers to place their workwear, hi-vis, and personal protective equipment (PPE) orders with just one low-cost supplier—saving time, money and a lot of hassle. For more information about VSafety visit www.vsafety.co.uk

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