January/February 2005
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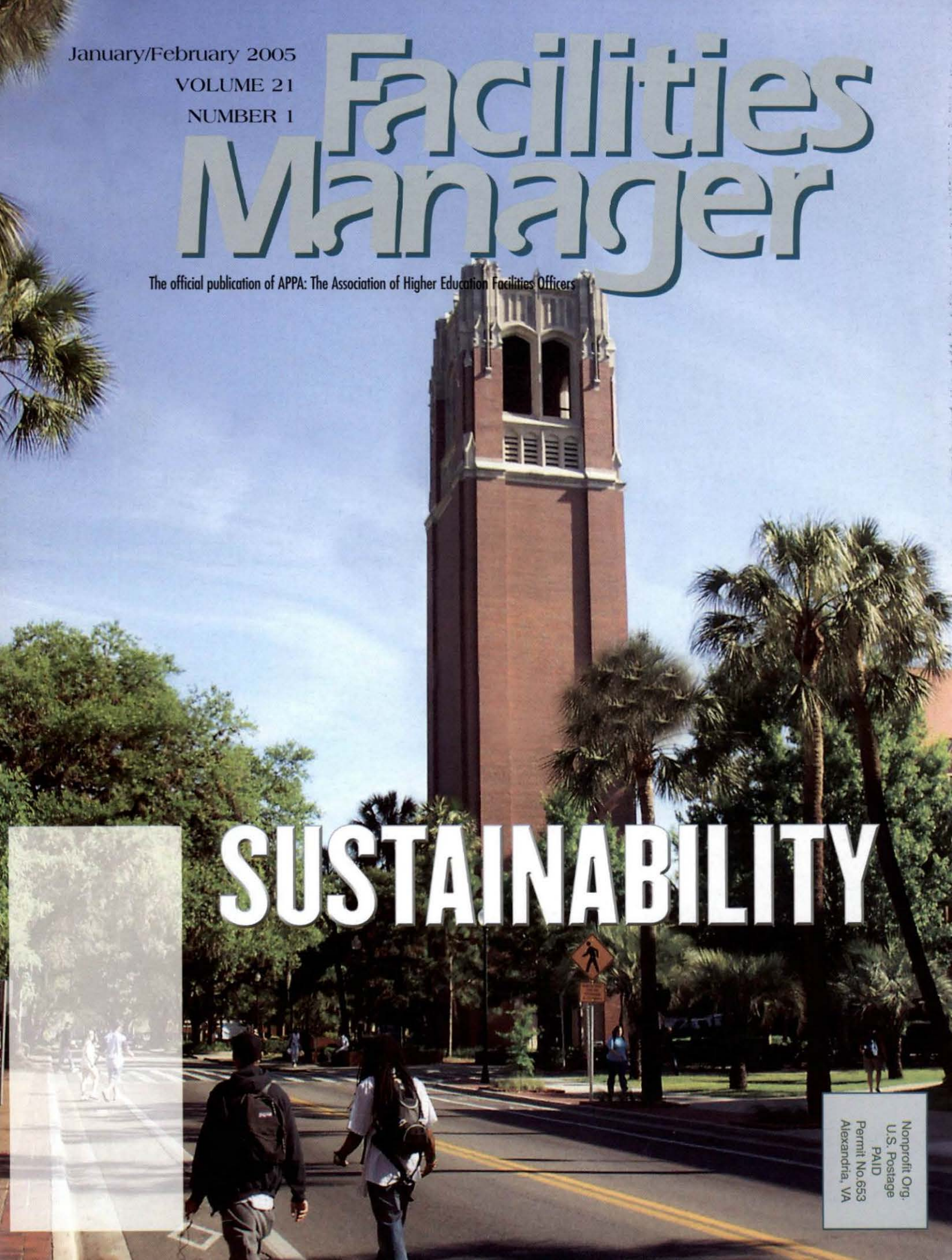
NUMBER 1

Facilities Manager

The official publication of APPA: The Association of Higher Education Facilities Officers



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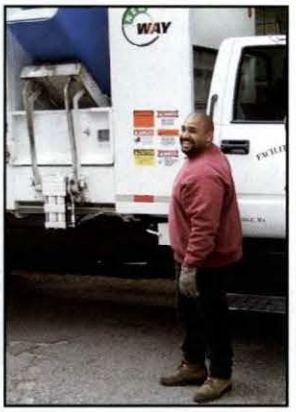

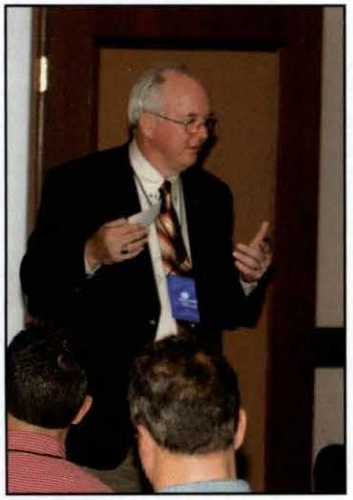

THIS ISSUE'S TOPIC:

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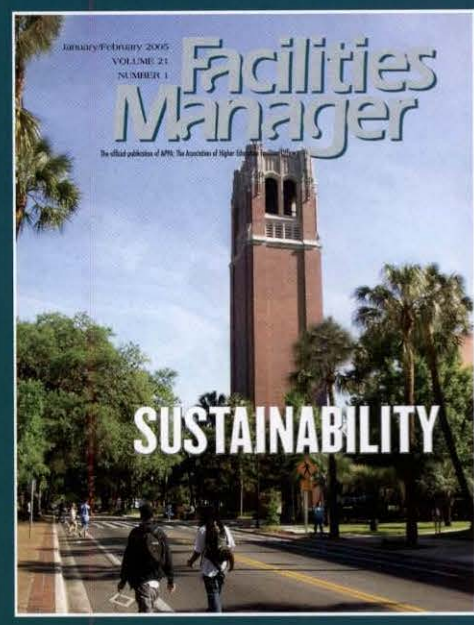
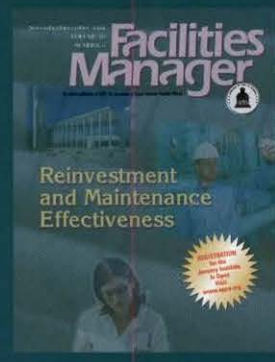
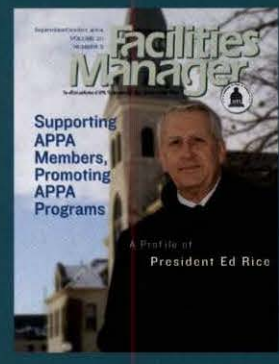
Columns

Cover photo courtesy of the University of Florida







Facilities Manager

PRESIDENT: Edward D. Rice, Kansas State University
EXECUTIVE VICE PRESIDENT: E. Lander Medlin, Alexandria, Virginia

EDITOR: Steve Glazner
ASSISTANT EDITOR: Betsy Colgan
SUBSCRIPTIONS: Cotrenia Aytch
CREATIVE DIRECTION: Creative Media Group
PRINTING: Corporate Press, Inc.
EDITORIAL OFFICE: 703-684-1446 ext. 236
FAX: 703-549-2772
E-MAIL: steve@appa.org
betsy@appa.org
cotrenia@appa.org
WEB: www.appa.org
ADVERTISING:
Gerry Van Treeck
Achieve Communications
3221 Prestwick Lane
Northbrook, Illinois 60062
Phone: 847-562-8633
Fax: 847-562-8634
E-mail: gvtgvt@earthlink.net

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Global Partner in Learning

From the Editor

by Steve Glazner

Sustainability is the theme, and it's a term that has come to have a variety of meanings. I won't attempt to pose one myself, but instead will let the contributors in this issue share their own views on the topics of sustainability, green design, and environmental stewardship.

You will learn more about the U.S. Green Building Council's LEED certification, which more institutions are adopting as a design and construction standard. In addition, you will learn about several exciting programs and activities that numerous organizations and institutions are doing to improve the design function not only for maintenance and operations but for a better working, learning, and living environment.

Sustainability is not a passing fad. It is becoming increasingly integral to the planning, design, construction, and operations of our educational facilities. The sooner we adopt and incorporate sustainable concepts into our ongoing efforts, the better-equipped our institutions will be to compete in the future.

This issue of *Facilities Manager* also introduces a new column, Code Talkers. This is an outgrowth of the code advocacy and compliance efforts that Past President Brooks Baker introduced to APPA during his presidency.

Code Talkers will be written by a variety of experts each focusing on a different code, standard, or topic affecting educational facilities. You will see articles on fire and life safety codes, new or ongoing environmental mandates, building codes, healthcare guidelines, international standards, and other topics of interest. If you have suggestions for future topics, please contact us at steve@appa.org or betsy@appa.org.

Many thanks to Brooks Baker, Alan Bigger, and Doug Erickson for their efforts in the code arena and in launching the Code Talkers column.

Finally, we are happy to announce that APPA's new Facilities Core Data Survey is underway, following a long development and testing period. This exciting new survey contains 12 modules; you may complete as many or as few of the modules as you wish, depending upon your interest or institutional need. We thank APPA's Information and Research Committee and Laura Long of LTL Collaborative for their leadership and assistance in developing the new survey.

The 12 modules are:

- General Data
- Operating Costs
- Strategic Financial Measures
- Financial Performance Self-Evaluation
- Internal Processes
- Internal Processes Performance Self-Evaluation
- Innovation and Learning
- Innovation and Learning Performance Self-Evaluation
- Customer Satisfaction
- Customer Satisfaction Performance Self-Evaluation
- Personnel Data and Costs
- Comments for Improving Survey

Upon completion of five of the modules you will receive several instant reports based upon your responses. These include:

- Operating Costs Measurements Report
- Preliminary Strategic Financial Measures Report
- Staffing Costs Report
- Hourly Rate Model Report
- and more.

These reports will give you immediate feedback on such indicators as the Facility Condition Index, the Needs Index, Operating Cost as a Percentage of Current Replacement Value, and much more. And when all the data have been scrubbed and analyzed, all participating institutions will receive a customized report showing comparisons of their data to other participants in areas such as Carnegie classification, APPA region, public/private, and other categories.

We need your school to participate in the Facilities Core Data Survey in order to build a database of key facilities performance indicators that will provide us with reliable, credible, and annually updated information.

To participate in the survey, please go to www.appa.org/research/fcds.cfm and register. The deadline for the survey is March 18, 2005.

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Compiled by Betsy Colgan

In Memoriam

APPA member David D'Angelo was killed last October in a motorcycle accident near his home. D'Angelo was the director of facilities management at Bowdoin College, Brunswick, Maine, and the Institutional Representative to APPA.

"He especially found pleasure in praising his staff, and he started every conversation with a success story about someone in his department," said Senior Vice President for Planning and Administration Bill Torrey.

D'Angelo's most recent accomplishments on campus included the restoration of the Chapel and the construction of Kanbar Hall, which he helped to dedicate the night before his death.

Just a Reminder

APPA has moved to a Web-based, user-friendly data program which will allow you to access your member record 24-hours a day; search the member directory for colleagues or business partners from around the world; register for APPA's quality educational programs; complete APPA's annual Facilities Core Data Survey; and much more. In the months to come you will see even more services, such as an improved bookstore, online research results, and a customizable MyAPPA page.

You should already have received a username (your APPA member number) and a randomly chosen password. For security purposes, APPA recommends that you change your password and make a record of it.

If you already have a username and password, you will need to discontinue using it. The username and password sent to you by e-mail will replace them.

If you have any questions, please do not hesitate to contact the APPA member services department at 703-684-1446.

Data Collection Survey Deadline Extended

The deadline for completing APPA's new Facilities Core Data Survey has been extended to March 18, 2005.

This new survey will be conducted annually and has 12 modules which can be divided among staff members. You may choose to complete the entire survey or only several modules each year. Upon completion of a module, you will receive an instant report based on your responses. The data collected from this survey will be compiled for various purposes, including a publication on facilities performance indicators. Review the survey questions and definitions at www.appa.org. Remember, the more information APPA has, the better we can serve your data needs.

Overstock Catalog Available

Now is your chance to add several APPA classics to your resource library, from *A Foundation to Uphold* to *Changing Currents in Deregulation*, at significant savings to you. These books are packed full of relevant information necessary to perform your job effectively on a day-to-day basis. Take advantage of these overstock publications by visiting APPA's online bookstore at www.appa.org.

PGMS Announces Election of New Leaders

Chris Fay, grounds manager at the University of North Carolina at Greensboro, was elected and installed as the new volunteer president of the Professional Grounds Management Society (PGMS) during

Chris Fay

the Society's annual business meeting held in conjunction with the Green Industry Exposition in Charlotte, N.C.

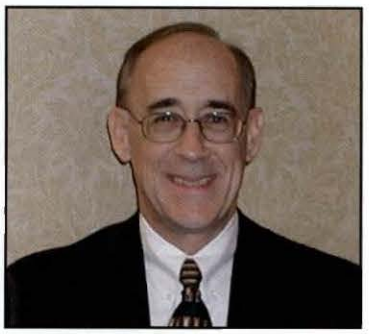
In addition to Fay, PGMS members elected Ellen Newell, CGM, assistant director of grounds services at Arizona State University, as their president-elect, and Greg Nichols of Bryn Mawr College as treasurer.

Joseph Jackson, CGM, and Mike Loftus, CGM, were re-elected as South East and North East regional directors, respectively. Jackson is the assistant director of facilities management at Duke University and Loftus serves the University of Delaware as assistant director of facilities.

PGMS is an APPA strategic alliance partner. For further information on PGMS and its new leaders, visit www.pgms.org.

Kevin O'Donnell Recognized by PGMS

Kevin O'Donnell, CGM, was honored as the recipient of the Professional Grounds Management Society's (PGMS) inaugural E. Earl Wilson Award during ceremonies at the Society's 2004 School of Professional Grounds Management & Green Industry Expo in Charlotte, N.C. This new award is a tribute to E. Earl Wilson, a past president of PGMS, and is



Kevin O'Donnell

considered the Society's highest honor. It is presented as deemed appropriate for outstanding and sustained service and dedication to PGMS and the Green Industry as a whole.

O'Donnell is the superintendent of grounds at Villanova University, Villanova, Pennsylvania.

For a complete list of awards presented by PGMS, visit www.pgms.org.

2004 Green Star Award Winners

The Professional Grounds Management Society recognized 17 grounds management programs for excellence in the Society's 2004 Green Star Awards Competition during its 2004 School of Professional Grounds Management held in conjunction with the Green Industry Exposition. Facilities-related grounds management programs are listed below.

Hospital or Institution
Grand Award—Duke University Medical Center
Grand Award—University of Virginia Health System

Park, Recreation Area or Playground
Grand Award—Lincoln Park/Chicago Park District

Athletic or Professional Fields
Honor Award—Texas Tech University
Grand Award—Duke University/ Wallace Wade Stadium

University and College Grounds
Grand Award—California Institute of Technology
Grand Award—Lebanon Valley College
Grand Award—University of Missouri - Rolla
Grand Award—University of Texas at Austin
Grand Award—Wake Forest University

Urban University Grounds
Honor Award—Southern Methodist University
Grand Award—American University
Grand Award—Dallas Theological Seminary
Grand Award—University of Nevada - Las Vegas

AIA Elects New President

Douglas L. Steidl, FAIA, founding principal of Braun & Steidl Architects, Inc. of Akron and Columbus, Ohio, was inaugurated as the 81st president of The American Institute of Architects (AIA) December 3 in Washington, D.C.

Steidl was elected on a platform of professional stewardship to society.

Douglas L. Steidl

"Sustainable design, smart growth, and livable communities should all be terms that the public immediately associate with the AIA," stated Steidl in his platform address.

Ecology Yearbook Available

Interested in conservation or sustainability projects? Pick up a copy of the 15th edition of *Campus Environment Yearbook*, released late last year by the National Wildlife Federation, the nation's leading conservation, education, and advocacy group.

The current edition includes 46 case studies focusing on projects ranging from generating wind power, to composting with worms, to restoring habitat for wildlife, from 37 higher education institutions in the United States and Canada.

Published each year since 1989, *Campus Environmental Yearbook* is the only publication of its kind in the U.S.

To order, visit www.nwf.org.

Facilities Department Recognized

Iowa State University's Facilities Planning and Management Organization (ISU FP&M) will be recognized for the Tier 3 level of the Malcolm Baldrige National Award Criteria in the category of Business. Governor Vilsack and the Iowa Quality Center will present the Bronze award to ISU FP&M during the Governor's Recognition of Performance Excellence Celebration on March 1, 2005.

For more information on this award, visit www.iastate.edu.

Eastern Region
Keith Woodward
ERAPPA Vice President of Technology & Communications

For the first time in its existence, the ERAPPA board and its committees (technology & communications, education, and membership) and chapter presidents all gathered in Syracuse for a mid-year meeting to talk about where the organization was headed.

Then ERAPPA president Kevin Petersen (Catholic University) applauded the one day meeting. "It was fantastic. It was an opportunity to get people from all the chapters together for a one-day meeting that allowed huge transfers of information and improved communications. I think it helped us organizationally, because it allowed people the opportunity to grow into leadership roles."

The educational committee has been at work setting the educational agenda for the upcoming year. Under Willy Suter's (American University) leadership, the following things have been established: obtaining Dr. Steve Sobel as this year's Circuit Speaker, working to ensure that our members are aware of the valuable educational resources available through ERAPPA's education resource library, and beginning to collect information from the membership about training topics.

At the 54th Regional Meeting in Syracuse, September 26-29, hosted by the New York chapter, new officers were elected. The slate for the 2004-05 term is President & APPA Junior Representative, Ron Dupuis, Wilfrid Laurier University; President-Elect, Leon MacLellan, St. Francis Xavier University; Vice President of Chapter Affairs, Fred Long, La Salle University; Vice President of Education, Willy Suter, American University; Vice President of Membership, Sarah High, University of Maryland, College Park; Vice President of Technology & Communications, Keith Woodward, Quinnipiac University; Treasurer, Sherri Vucci, Smithsonian Institute; Secretary, Jim Barbush, Pennsylvania State System of Higher Education; and APPA Senior Representative, Kevin Petersen, Catholic University of America.

The meeting was a huge success, with over 600 people crowded into the OnCenter in downtown Syracuse for educational sessions as well as visits to our Business Partners. Monday morning opened with Jim Boeheim, basketball coach from Syracuse University, talking about leadership and his keys for success. In addition to the plethora of educational offerings, one highly attended event was the Tuesday panel discussion featuring six university presidents. The conference concluded with a presentation from Barry Roberts entitled "Practice Safe Stress."

Syracuse University Men's Basketball coach Jim Boeheim and 2003-04 ERAPPA President Kevin Petersen snap a quick photo with NYAPPA host committee members.

"Steve Bellona (Hamilton College) and Bob Britton (Syracuse University) did an outstanding job as co-chair and chair," said Ron Dupuis who was also the liaison to the host committee and worked with them for the last couple of years. "In every facet, the conference was a great success. I'm looking forward to the 55th Regional Meeting in Atlantic City, New Jersey, October 2-5."

Business Partners (Club Car) and attendees interact during a break in the educational sessions.

The ERAPPA website (www. erappa.org) has been overhauled and updated and is drawing lots of attention from all 11 chapters. "It provides current information to all of us," said technology committee member Dan Gearan. "Not only can the members get information from their local chapter sites, but the ERAPPA site is now a place to find information on all regional activities."

Attendees participate in one of the many interesting educational sessions.

Big hitter John Jensen from Maryland-DC chapter drives a long one at the annual golf tournament. Jensen (Towson University), along with his partners Norm Young (University of Hartford) and Bill Mack (Shawmut Construction) were on the victorious team as well.

An electronic newsletter has replaced the one region members used to receive via the U.S. mail. ERAPPA members will get more frequent communications but with fewer pieces of content. Michele Estep (American University) and Cynthia Linz (Cutler Associates) continue to serve with distinction as the editors of the newsletter.

Scholarship winners for the 2005 year include Stephanie DeStefans (American University), Vanessa Myers (University of Guelph), Jule Raichle (Ocean County College), Walter Shorter (Prince Georges Community College), and Stephen A. Gazzola (University of Guelph).

* * *

Southeastern Region
Kate Van Sant
SRAPPA Vice President for Communications

With the theme of "Jazzin' Up Your Facility," the 2004 SRAPPA regional meeting was hosted by Xavier University October 29-November 2 at the New Orleans Hyatt Regency. The City, known as "The Big Easy," for its legendary hospitality, excellent food, and entertainment, greeted approximately 400 attendees to SRAPPA's 53rd gathering.

The conference began with a golf tournament at the Eastover Country Club, followed in the evening by the first official Multi-Cultural mixer, with a program designed to increase the involvement of women, diverse nationalities and races, and younger professionals within the region. The mixer was very well attended and a number of enthusiastic potential members from different backgrounds were welcomed into the SRAPPA family. Following the mixer, all attendees enjoyed an Early Bird reception featuring hot hors d'oeuvres and an outstanding vocalist.

Synthia Smith of ARAMARK presented an informative and thought-provoking Diversity Workshop at Sunday's breakfast, followed by the First Timers' meeting, where newcomers had a chance to introduce themselves and add their ideas to the mix. Board members and SRAPPA veterans were on hand to welcome first timers and offer assistance and support.

SRAPPA Attendees Celebrate Halloween

Cheerful yellow and white drapery festooned the Exhibit Hall, which opened for lunch with delicious food prepared on site, sponsored by SDI and Sempra on Sunday, and Siemens and ADT Securities on Monday. Almost 70 exhibitors participated, offering a wide variety of services and products. Four delightful women from the University of Memphis took photos of attendees with a gold-suited cut-out of Elvis to publicize next year's conference in Memphis. Many marvelous prizes were awarded by the exhibitors and the host committee.

Thirty-two educational sessions provided information and expert contacts during the conference.

On Sunday night (Halloween) all embarked for a "Creepy Cruise" on the *Creole Queen*. Gentle temperatures and clear skies, along with luscious food, a Dixie Land band, and a costume contest made for a perfect evening on the Mississippi River. This event was sponsored by Jani-King and Landis Construction Company.

Monday's breakfast included an address by APPA President Ed Rice, and a presentation on the Center for Facilities Research (CFaR).

Attendees enjoyed a special treat Monday evening—Jazz Night at Xavier University, sponsored by Sodexho. Following a meal of chicken cordon bleu and a welcome by Xavier's President Norman C. Francis, internationally-acclaimed musician, teacher, and recording artist Dr. Michael White and his colleagues provided a verbal and musical history of jazz.

Committee reports were presented and officers elected at the Tuesday breakfast business meeting, sponsored by TMA and Priority Systems. Other sponsors included: Cintas and Foxcor for the t-shirt exchange luncheon and UNICCO and Integrated Facilities Services for Tuesday night's reception.

Gaspar J. "Buddy" Stall, historian, comedian, and Mardi Gras authority, gave the group a presentation of fun facts about Louisiana at the Annual Banquet, with music by "The Top Cats." Incoming President Joe Fisher addressed the membership and talked about his plans to increase training opportunities and to encourage new State chapters such as FLAPPA.

Officers installed at the Banquet were President, Joe Fisher, West Virginia University; President-Elect, Marion Bracy, Xavier University; 1st

2004-05 SRAPPA Officers

Vice President, Jim Hellums, University of Memphis; 2nd Vice President, Glenn Reynolds, Duke University; Vice President for Long-Range Planning, Jeff Turner, West Liberty State College; Vice President for Communications, Kate Van Sant, West Virginia University; Vice President at Large, Sylvester Johnson, Tulane University; Secretary/ Treasurer, David Gray, Middle Tennessee State University; APPA Junior Representative-Elect, Bob McMains, Emory University; APPA Junior Representative, Bill Elvey, Virginia Polytechnic Institute and State University; and APPA Senior Representative, Jim Roberts, Campbell University.

The 2005 conference will be held October 8-11 in Memphis, Tennessee and the host school is the University of Memphis. Jim Hellums will head the host committee.

Midwest Region
Ernie McVay
MAPPA Newsletter Editor

The MAPPA Educational Conference really rocked and rolled in 2004. Home of the Rock & Roll Hall of Fame, Cleveland, Ohio welcomed MAPPA members and guests to the shores of Lake Erie. From an appearance by John Denver (aka host Gene Matthews from Case) during the opening Tradeshow and Reception, to dinner at the Rock & Roll Hall of Fame, to the best of Motown during the closing banquet, this conference was all about rockin' and rollin' and nothing rocked more than the educational programming.

The conference was held at the beautiful and historic Renaissance Hotel. Our hosts from Case Western Reserve University provided outstanding hospitality and coordinated a near perfect event for 202 participants, 32 spouses and guests, and 211 Business Partners with their 70 exhibit booths.

Fifty attendees enjoyed the golf outing to Fowler's Mill. For those non-golfers, our hosts arranged for tours of their beautiful campus, including the renowned Richard B. Lewis Building, or a tour of the General Electric Lighting Institute.

The conference officially kicked off Sunday evening with the Business Partner Tradeshow and Reception. Since it was Halloween night, many guests came in costume and were treated to a nice meal, interesting and informative exhibits, and even an Elvis sighting (or was that Jim Cesen from Case?). At the conclusion of the tradeshow, a jam-packed, first timers MAPPA attendee reception was held. It was quite exciting to meet and welcome to MAPPA the large number of first time attendees. The final event of the day was the Business Partner reception where we had a chance to mingle with and thank our outstanding and valued business partners.

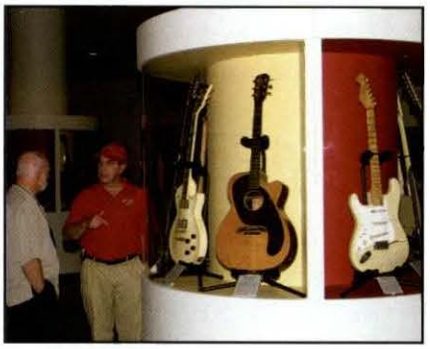
Monday morning began with a welcome address from Gene Matthews followed by keynote speaker, Dan

Teaching at MAPPA's Educational Conference

Keller—the Cotton Candy Man. Dan is vice president and general manager of the Cedar Point Amusement Park. He first impressed the audience by relating how when the host committee asked the amount of his speaking fee, he replied that he did not want a fee but that the funds earmarked for him should be given to our selected charity—New Life Community. Drawing parallels between running a facilities organization and an amusement park, Dan urged everyone to stay as enthusiastic as a roller coaster rider shown in one of Cedar Point's television commercials and to stay on the cutting edge of innovation in order to attract new students.

Following the first networking break, the educational sessions began with an emphasis on providing participants with a tool to take home with them. The tradeshow followed the morning's educational sessions where participants had the opportunity to browse the exhibits and booths of our Business Partners while enjoying lunch. At noon in the exhibit hall, a new feature—the 20-minute topical session—began with two sessions conducted per hour. These sessions continued throughout the afternoon.

A trip to Cleveland is not complete without a visit to the Rock & Roll Hall of Fame. Our tour included dinner on Monday evening underneath the glass pyramid designed by famed architect I.M. Pei. After dinner, the museum was opened exclusively to MAPPA members for several hours of meandering down memory lane. Regardless of one's taste in music, there



Networking at the Rock 'n Roll Hall of Fame

was something for everyone in the museum.

Tuesday began with the annual business meeting and was followed by additional educational sessions, winding down with the Small School exchange and the Large School exchange.

The conference concluded with the annual MAPPA banquet. Following dinner, Becky Hines from The Ohio State University assumed the presidency from Chris Ahoy of Iowa State University. Befitting the wonderful meal that had just been enjoyed, Hines compared the offerings of MAPPA membership to a smorgasbord and challenged each member to bring a new member to the feast. The MAPPA officers for 2004-05 include: President, Becky Hines, The Ohio State University; President-Elect, Jerry Carlson, Illinois State University;

MAPPA President Becky Hines Addresses Audience

Secretary, John Ott, The Ohio State University OARDC; and Treasurer, Martha May, Purdue University.

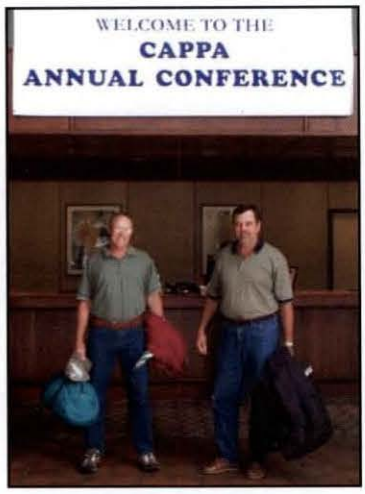
On Wednesday morning, our hosts from Case Western Reserve University had one last chance to shine. After breakfast, those with later departure times could either tour the Case campus or take the General Electric Lighting Tour. A special thanks goes to our host and program committees for all their hard work.

As we look forward to the 2005 educational conference in St. Paul, Minnesota, mark your calendars now for October 9-13.

* * *

Central Region
Vickie Younger
CAPPA Newsletter Editor

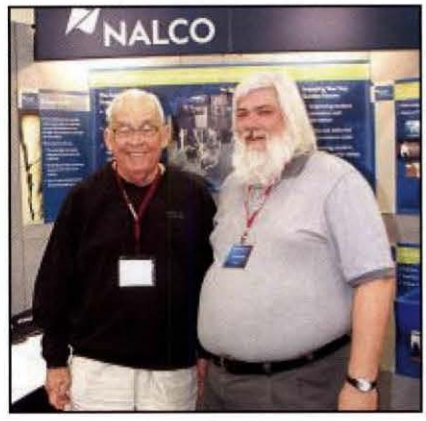
The 2004 annual meeting of the Central Association of Physical Plant Administrators (CAPPA), hosted by Metropolitan Community Colleges (MCC), was held October 9-13, at the Hyatt Regency Crown Center, Kansas City, Missouri. This great location is in the heart of the city, within a mile of the MCC Administrative Center, the Broadway Plaza, and the Penn Valley Campus. Everyone seemed to be in a festive mood as they arrived in the city known for barbeque and blues.



Dennis Mohling and Tom Peterson of Emporia State University

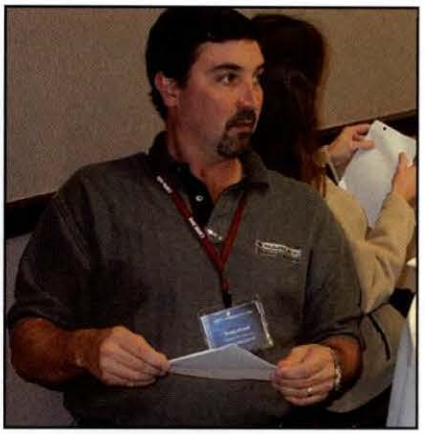
This meeting certainly had something of interest for every person who attended.

Twenty-four educational sessions were scheduled which followed four tracks: innovative technology and applications; leadership and management; maintenance and operations of buildings and grounds; and professional development. Sessions conducted by higher education members included: Skill-Based Training: Closing the Gaps; Can Gorillas Teach Us about Campus Improvements?; APPA Supervisor's Toolkit—How It Can Benefit Your Organization; Power Project Management: Predicting & Preventing Problems and Pitfalls; and Performance Contracting Six Years Later: Successes and Lessons Learned. The remaining sessions were provided by Business Partners who gave terrific support and sponsorship throughout the event.



Long time friends to CAPPA, Jim Payne and John Scheuch pose before the "show begins."

Jane and Lisa Meyer help give the conference that feeling of family.



Rusty Stroud participates in an exercise as part of the Supervisor's Toolkit training program.

One hundred thirty-eight Business Partners, representing 70 companies, showcased products and services ranging from architecture to waterproofing. They also sponsored the golf tournament, City of Fountains Tour, Sunday Night Football, welcome breakfast, breaks, lunch buffet, the bar-b-q competition and night at Union Station Pavilion, the jazz crawl, and the awards banquet and reception.

The spouse/guest program was well attended and included admission to any of the conference functions as well as two special events. The special events included a trip to County Club Plaza which featured 180 stores and boutiques along with lunch, and a trip to the steamboat *Arabia*, a ship that was recovered 132 years after sinking in the Missouri River. Preservation techniques and displays of recovered items from the *Arabia* highlighted this visit. Upon return to the hotel, this industrious group did a service project for the benefit of Habitat for Humanity.

Running concurrently with the conference was Supervisor's Toolkit: Nuts and Bolts of Facilities Supervision. This new training program from APPA was presented by regional trainers and included 30 participants from 14 institutions. It focused on direct interaction between supervisors on systematic approaches that can be used in organizing, managing, motivating, and meeting customer expectations. The group worked at skills enhancement in these areas and on other difficult people situations and proudly reported that one of their own was the winner of the grand prize drawing for the Caribbean Cruise.

The banquet and awards ceremony celebrated the hard work and dedication of many outstanding members. Terrific entertainment capped the evening and those "strong of heart and constitution" headed out for the Jazz Crawl. David Millay, University of Arkansas/Little Rock, gave an overview of early plans for CAPPA 2005. We are looking forward to another exciting year!

The business meeting was held Wednesday morning. Reports were given and President Ed Rice led the installation of new officers. The 2004-05 CAPPA officers include: President, Darrel Meyer, Metropolitan Community Colleges; 1st Vice President, David Millay, University of Arkansas/Little Rock; 2nd Vice President, John Greene, Trinity University; 3rd Vice President, Michael Johnson, University of Arkansas; APPA Junior Representative, Art Jones, Black Hills State University; APPA Senior Representative, Al Stoverink, Southeast Missouri State University; Education Chair, Pat Apel, Maryville University of St. Louis; Information Services Chair, Terry Major, Southeast Missouri State University; Membership Chair, Randy Culver, Black Hills State University; Secretary, Arthur E. Sykes, Eastfield College; Treasurer, Neal Swarnes, Cottey College; and Newsletter Editor, Vickie Younger, Kansas State University.

A really big CAPPA thanks to Jane and Darrel Meyer and the Metropolitan Community College staff for hosting such an outstanding event!

Mark your calendars for September 16-21 and join us in Little Rock in 2005!

The Grand Tetons Viewed from Jackson Lake Lodge

Rocky Mountain Region
Mark Shively
RMA President

The 52nd RMA meeting was held September 18-21, 2004, in Jackson Hole, WY, with the theme of "New Thinking." Attendees stayed at the picturesque Jackson Lake Lodge which featured 60-foot picture windows framing the Grand Tetons and was situated on a bluff overlooking Willow Flats where moose could be seen grazing.

APPA representatives attending the meeting included APPA President Ed Rice, who addressed the attendees at the Tuesday's morning breakfast, Executive Vice President Lander Medlin, and Publications Manager Betsy Colgan.

Along with registering for the meeting on Sunday, attendees could play in a golf tournament at the Jackson Hole Golf and Tennis Club or choose to take a bus tour to Yellowstone National Park where Old Faithful was the featured attraction and performed admirably. Sunday evening the Business Partners opened the exhibits and

RMA Attendees at the Diamond Cross Ranch

hosted a reception and social hour.

Monday's keynote speaker, Dr. Philip L. Dubois, president of the University of Wyoming, spoke on the changes that are affecting higher education and the challenges facilities management will face with these changes. Educational sessions on Monday included Change Management, Facilities Management's Role in Recruitment and Retention, Total Ownership Experience, and Motivational Environments.

Monday evening's social event was a trip to the Diamond Cross Ranch owned by Grant and Jane Golliher. Grant says "horse whispering is borrowed wisdom and older than the hills and plains the wild mavericks run." Using a restraint-free approach, he demonstrated his skills in training a young colt and by the end of the demonstration was riding Fury with ease. Grant also entertained RMA attendees with his legendary cowboy poetry. A wonderful dinner of barbeque ribs and chicken topped off the evening.

Tuesday began for some with a trail ride along the crest of the Tetons. The views were spectacular and some of the riders wished the horses would pay more attention to the trail rather than to the views and to the other horses. Sessions for the day included Facilities Management from an Academic Perspective and Facilities Reinvestment: Capital Renewal/Reinvestment. In the business meeting, future meeting sites were announced: 2006, Billings, Montana, hosted by Montana State University and 2007, Albuquerque, hosted by the University of Mexico. The evening ended with a banquet and entertainment from The Centennial Singers from the University of Wyoming. Awards presented at the banquet were Presidents Award, John Bruning, University of Colorado at Boulder; Newsletter

RMA 2004-05 officers Eakle Barfield, John Morris, Tommy Moss, Mary Vosevich, Paul Smith, Mark Shively, Dave Brixen

Award, Paul Smith, Pima Community College; Business Partners Award, Stanley Consultants, Inc.; and Certificates of Appreciation to Eakle Barfield, Montana State University, Craig Bohn, University of Utah, and Dave Brixen, Arizona State University.

The 2004-05 RMA officers are President, Mark Shively, University of Wyoming; 1st Vice President, Tommy Moss, Colorado State University; 2nd Vice President, Eakle Barfield, Montana State University; Secretary Treasurer, John Morris, Colorado State University; Newsletter Editor, Paul Smith, Pima Community College; APPA Senior Representative, Paul Smith, Pima Community College; and APPA Junior Representative, Dave Brixen, Arizona State University.

The grand prize winner of the big screen TV, donated by the Arizona Sponsor Group, was Lee Richardson,

facilities manager, University of Montana-Western, Dillon, Montana.

Thanks to Jenn Coast, conference co-director, Mike Milam, educational programs, Stan Hobbs, prizes and gifts, Rachael Sisneros, Kari Hallingbye, and Darcy Bryant, for business partner and financial support.

The 2005 RMA meeting will be held September 11-14 in Vail, Colorado and hosted by Colorado State University. See you there!

* * *

Pacific Coast Region
John Schulze,
PCAPPA Newsletter Editor

Scott Burns and his incredible staff from San Diego State University hosted the 53rd annual meeting and educational conference in beautiful sunny downtown San Diego. The theme for the conference was "Work—Sun—Fun" in no particular order and every effort was made to maintain this balance throughout the four-day conference.

The conference was well supported with 305 delegates and 73 vendor representatives in attendance. Thanks to the great weather, some of the vendor booths and part of the lunch areas were outside with easy access to the interior spaces. J. R. Huffman and James Alwine of San Joaquin Chemical once again provided a generous donation for educational scholarships and sponsored a great evening's entertainment at a local restaurant in San Diego's historic Gaslamp district. This continued a long history of generous support by San Joaquin Chemical and they are much appreciated by PCAPPA.

The educational sessions followed three tracks: Code and Technical Issues, Sustainability, and Innovative Practices. Educational sessions for these three areas included Sustainable Campus Operations from the University of Washington, Impacts of New Codes on Elevators from Tyco/Simplex, and The Place for Covey in Facilities Management from the University of Puget Sound. Mark Hunter, chair of the Education Committee, observed that one of his most enjoyable duties in helping to host a conference is reading and compiling the comments received from the evaluations of the presentation. Over 800 evaluation surveys were received and contained many positive, helpful comments and suggestions for improving the process.

PCAPPA's Board has established an Educational Scholarship program to provide financial aid to individuals who wish to attend the PCAPPA conference or other APPA programs. A total of $21,500 has already been awarded, and more scholarships are currently in process. The roots of this

success may lie at least partially in the fertile soil of current economic reality. Still, PCAPPA is extremely pleased to be able to assist those members in need of support. Seventeen individuals received $1,000 awards to attend the 2004 PCAPPA Annual Conference in San Diego. An additional three individuals have received scholarships for an APPA educational program. Institutions represented by these awards include one Canadian province and five states, ranging from British Columbia, Canada to California.

The "fun" part of the conference included a trip to San Diego's new baseball park to see the Padres battle the Dodgers for a playoff slot, and a bay cruise that provided a close up view of the new aircraft carrier museum featuring the Midway. The obligatory golf tournament was held at the beautiful Torrey Pines Golf Course and the conference ended with a deep sea sport fishing trip.

Chris Christofferson receives a check for the Scholarship Fund from San Joaquin Chemicals

Towney Angel, the incoming president, asked the members to join him in recognition and appreciation of the leadership Chris Christofferson has been providing during his second term as president of PCAPPA. "It is service with distinction and deserving of our gratitude," stated Angel.

The 2004-05 officers of PCAPPA are President, Townsend Angell, Reed College; President-Elect, Scott Burns, San Diego State University; Vice President Annual Meeting, Craig Benjamin, University of Puget Sound; Vice President-Elect Annual Meeting, Tony S. Valenzuela, San Jose State University; Secretary/Treasurer, Johnny Torrez, University of California System; Newsletter Editor, John Shultz, Foothill-De Anza College; APPA Senior Representative, John Wong, British Columbia Institute of Technology; and APPA Junior Representative, Chris Christofferson, Stanford University.

In 2005, we will travel to the Tacoma, Washington, where Craig Benjamin and the University of Puget Sound will host the conference in the new Tacoma convention center. With Mt. Rainier and Puget Sound to serve as a backdrop, this should indeed be a memorable and beautiful setting for a great conference. Plan to be there October 1-5.

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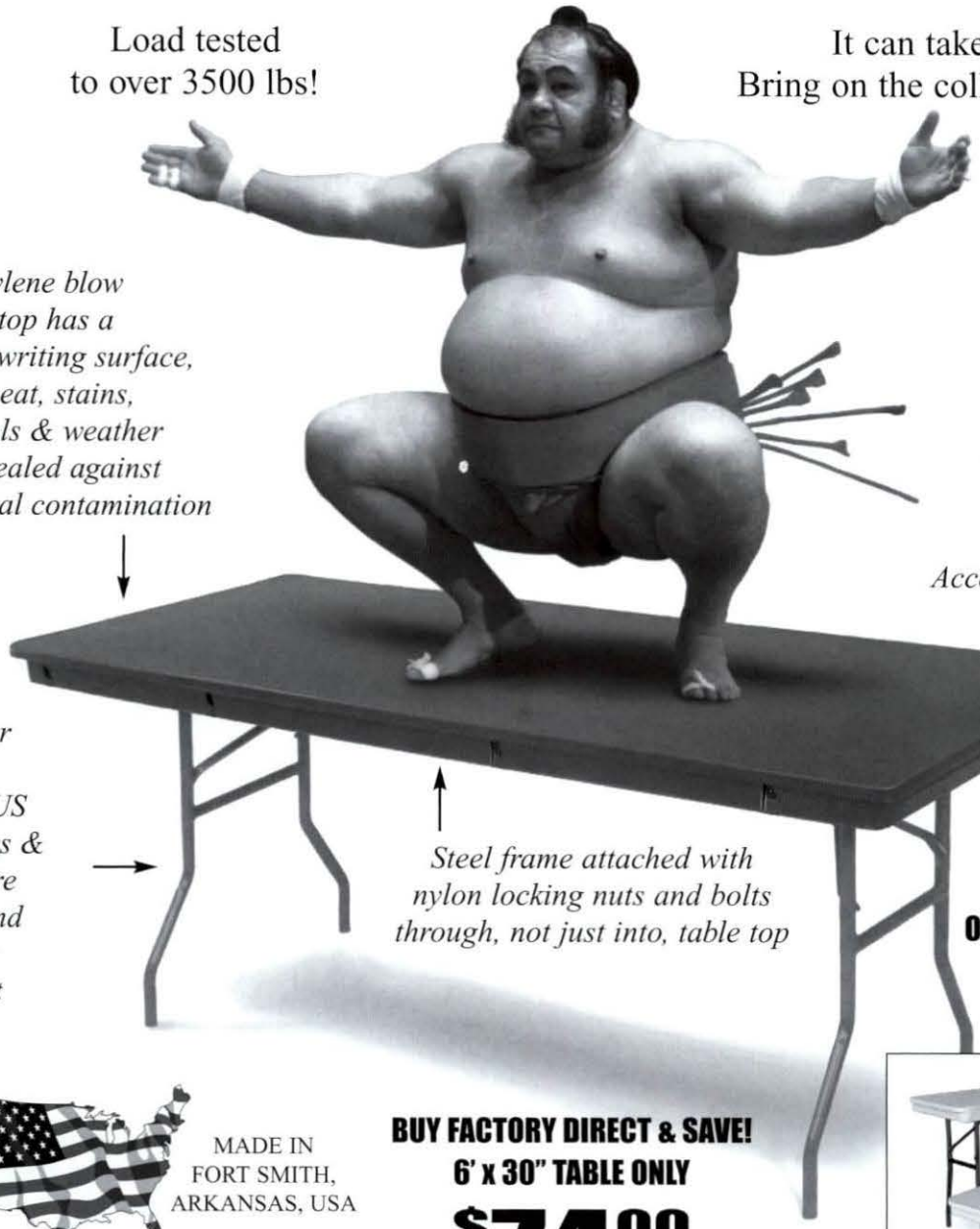

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A Legacy of Leadership

by E. Lander Medlin

Many of you may have read the book or seen the movie about the legendary frontiersman, gunfighter, and Indian warrior, "Little Big Man." I actually know him and call him my friend—Charlie Jenkins. As many of you may already know and for those of you who do not, Charlie died on November 14, 2004, but Charlie's personification of living, learning, and leadership will live on forever as his legacy to all of us. Each of us may have our own way of capturing his legacy; this is mine.

Having read Charlie's articles and book chapters, listened intently to his leadership "sermons," engaged actively in regular conversation and dialogue, and heard his teachings through our co-facilitation of the Leadership Academy's Individual Effectiveness Skills program (steeped in FranklinCovey's 7 Habits), there are several themes around leadership that have emerged for me. They are:

- *The practice of leadership and management are different.* The responsibilities and behaviors differ especially in their approach to problem solving. The focus is also dramatically different in that managers do things right and leaders the right thing.
- *Facilities managers must move from being just great maintainers of things to becoming great leaders of people.* Charlie said that as a profession we "over managed" (representing 98 percent of our time and focus) and "under led" (representing 2 percent of our time and focus). Charlie sought to alter that ratio especially given the challenges and demands of our workplace today and well into the future. He stressed that it is not an either/or but one of balance between the two; thereby, requiring an adjustment in our present style.
- *Leaders are purveyors of change.* We must not be content with the status quo, rather admit that we can always improve. He emphasized the importance of change by answering a question with a question. "How am I to know what to change? How am I to know what is the right thing?" He simply said, ASK two questions of your customers and the facilities management staff: 1) How are we doing? and, 2) How can we get better?
- *Leaders intensely focus on the value of relationships.* He firmly believed that great interpersonal relationships make for great customer service. By cultivating your relationship with customers, staff, business partners, and self, you will enhance your capability to provide great customer service, increase your influence and impact on others, and improve your opportunities for success.
- *Leadership is about mutual trust, respect, and confidence.* This is extremely difficult to do but the most rewarding of all. The organizational climate must be replete with a win-win attitude and mentality that focuses on mutual benefit and mutual satisfaction in all human interactions. An environment of cooperation, not competition. Charlie often quoted Stephen R. Covey who said, "It is much more ennobling to the human spirit to let people judge themselves than to judge them." He would also agree with J. W. Marriott Jr., who said, "Motivate them, train them, care about them, and make winners out of them . . . we know that if we treat our employees correctly, they will treat the customers right. And, if customers are treated right, they will come back." Charlie's comment to all of this was, "It isn't exactly rocket science, is it?"

Ultimately Charlie recounted three attributes of a leader: 1) must have a vision for the future; 2) must be flexible; and, 3) does not quit.

As you can surmise, Charlie was incredibly "profound" which according to Webster's Dictionary is defined as "having intellectual depth and insight and is characterized by intensity of feeling or quality." He had a superb command of the English language and invariably referred to Webster's Dictionary to offer a tacit and explicit definition of words and thoughts. He would then explain them simply, concisely, and succinctly; he truly had an uncanny ability to simplify and demystify the most complex issues and problems. Charlie also had an incredibly "profound" impact on others. Humble, as always, he came unabated and unbridled, willing and eager to share and/or listen to new and different thoughts and ideas. He did all of this with a style I call "vintage Charlie" which you can capture in his short responses and rhetorical questions.

Now you can better understand why I opened the article with the illustration of "Little Big Man." As a *frontiersman*, Charlie led the way, always doing the right thing and looking to new frontiers of opportunity and learning with energy and enthusiasm. He considered this part of life's wonderful journey. As a *gunfighter*, although an odd term in this day and age, Charlie never backed away from his principles and values. He was a risk-taker, but never foolhardy, always investing himself fully in anything he did or anyone he served to mentor. As a *warrior*, which is an equally impos-

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

ing term today but I would suggest appropriate, he had the warrior's spirit. He was not afraid to be different, to fight for bold ideas, or to take on new challenges to forge new territory. Equally as well, he was excited about life, living it to the fullest extent, eager and willing to give back to his friends and colleagues.

Ten years ago, Charlie was asked what he hoped people would remember about him. He said, "I hope they will remember the speeches on leadership; think that I was a special kind of APPA president; and that I helped us move in the direction of thinking a little more about leadership and a little less about management." If there was ever any doubt in Charlie's mind (or any of ours for that matter), I hope this helps just a bit to remove such doubt.

Suffice it to say that I already miss my buddy, my mentor, my teacher, and my role model! The outpouring of comments from across the country in the past two months tells me you do too! What a void for family, friends, and facilities professionals alike. I would suggest that if folks know Charlie—the Person—then, in equivalent ways, they know Charlie—the Professional. His convictions and his integrity were similar. However, his impact upon the facilities profession is far-reaching and will live on. Charlie might think it suspect, but I think it is still appropriate, to expand on this Covey quote/mission statement: "To live, to learn, to love, to leave a legacy." Applied to Charlie:

- To live—with meaning and purpose. Hence, his zest for life and all it offered.
- To learn—he did so with intensity and focus. Thus, his penchant for leadership and his determined walk with God.
- To love—with caring and conviction. His belief in the human spirit and strength of his relationships. He said in an article once: "It's about relationships dummies!" And, lest Ann, his loving and wonderful wife, NOT forget—Oh, how he dearly loved Ann!
- To leave a legacy—with influence and impact. Hence, his indelible imprint on the lives of so many fellow facilities professionals.

Charlie may be gone from our physical sight, hearing, and touch; but he will NEVER be gone from our hearts and our minds.

> Humble, as always, he came unabated and unbridled, willing and eager to share and/or listen to new and different thoughts and ideas.

Decoding the Confusing World of Code Regulation

by Brooks H. Baker III

In time of war, communication can be a critical strategic advantage or disadvantage. During World War II, encryption of communication between Allied fighting forces was critical to the success of military operations. Numerous encryption codes were devised by brilliant minds to be used in the Asian theatre by the U.S. armed forces, but all of them were broken by the Japanese in short order. A Marine who had grown up on a Navajo reservation and was fluent in the Navajo language had the idea to use the Navajo language to encrypt critical messages. The Navajo language is an extremely complex language and has never been written down due to its use of voice tones and inflections in communicating. Only a handful of people outside the Navajo nation spoke the Navajo language, and none were Japanese.

A number of Navajos were already fighting in WWII, and more were recruited to go into conflict zones to provide encryption/decryption services to the Allied forces. According to Major Howard Connor of the 5th Marine division, "Were it not for the Navajo Code Talkers, the Marines would never have taken Iwo Jima and other places." The Navajo Code Talkers were successful in coding and decoding messages for U.S. forces for the remainder of the war and the code was never broken.

For the last year or two, you have seen articles and educational sessions relating to code advocacy and code awareness. To some educational facilities managers, building codes, fire codes, and mechanical/electrical codes are as encrypted as if they were coded by a Navajo Code Talker. APPA's new Code Talkers column in *Facilities Manager* will enhance the facilities professionals' level of awareness of applicable codes for educational facilities and will provide insight into their meaning and specific applications at our individual institutions.

For example, many codes and regulations that impact the construction and operation of our facilities are confusing and conflicting. In other cases there are codes in existence that do not serve our best interests. Still other codes, if enacted, will impact the safety of our facilities negatively and will cost significant amounts of money for compliance.

Codes and standards which are being targeted initially for involvement by APPA are ones proposed by the National Fire Protection Association (NFPA): National Electric Code, Life Safety Code, National Fire Alarm Code, and more. Other agencies proposing codes that affect facilities include the U.S. Environmental Protection Agency (EPA), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the International Building Code (IBC). Some of our member institutions are not directly governed by NFPA or IBC, but have local or state codes that apply to them. So why is APPA's involvement in codes important to these institutions? Most local and state codes mimic the codes developed by NFPA, EPA, or IBC with only minor modifications. Therefore, nearly everyone is affected.

APPA's input into the creation and modification of these national and international codes will have an impact on the vast majority of our membership. These codes and/or standards provide valuable guidance for managing facilities and have a tremendous impact on the cost of operations. Knowing and understanding the codes which apply to our particular facilities and how we can best comply with the requirements of these codes is critical for facility managers in education. This is why we need to become more involved.

All facilities have fire pumps and fire alarm systems. Some of the requirements in existence may not be in the best interest of our buildings and occupants. Not because we don't want them to be safe; rather some of these requirements are unnecessary and over the top.

Currently there is a proposal in front of the committee members of the National Fire Alarm Code (NFPA 72) to require directional, audible devices in all buildings. The thought is that this technology will direct someone to an exit who is blinded by smoke from the fire. That sounds good, but what will it cost to install and test this equipment periodically? What is the statistical evidence that there is a need? How many people die each year in a fire because they were blinded by smoke and could not find the exit? These are questions which must be asked during committee meetings in order to arrive at the "right" decision. Will APPA have someone representing us in those meetings, making sure that our side of the issue is heard?

Watch the Code Talkers column in each edition of *Facilities Manager* to learn more about what is going on with code advocacy, how this can affect your institution, and how you can be more involved.

Brooks H. Baker is the associate vice president for facilities at the University of Alabama at Birmingham and APPA's Immediate Past President. He can be reached at bbaker@fab.uab.edu.

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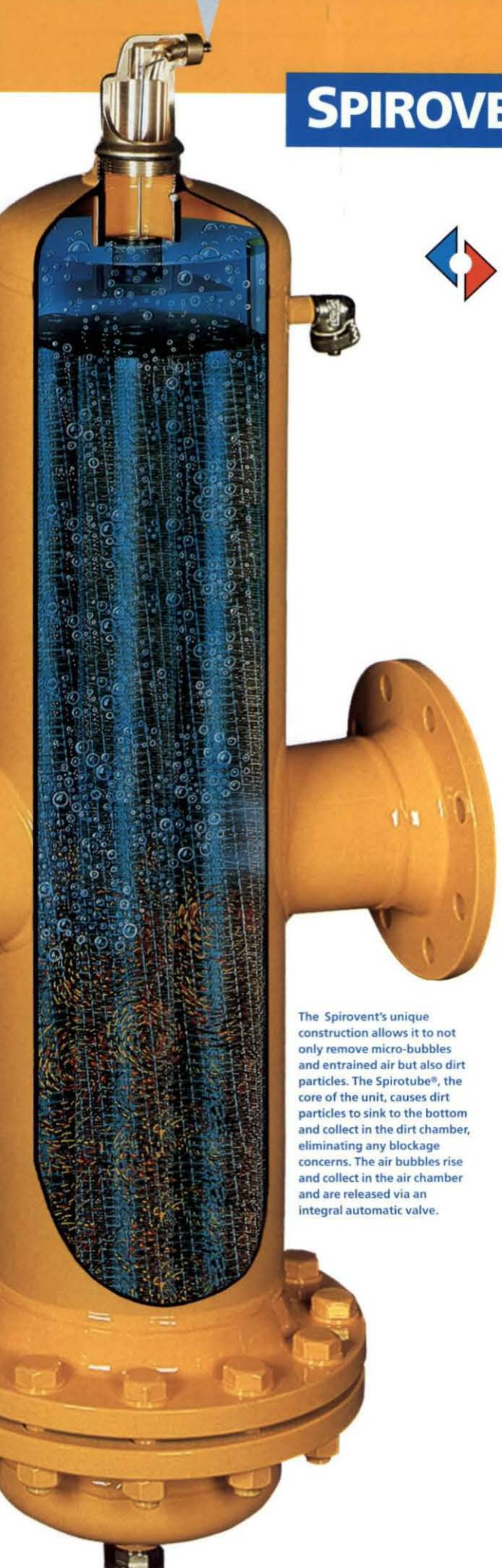

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To solve the problems, the existing centrifugal separator was replaced with a 6" high velocity Spirovent combination air/dirt separator. Within one week of installing the Spirovent, the problems were solved. "The product certainly proved itself," states Neal Swarnes, Cottey's Director of Physical Plant. "It works effectively, and we will continue down that path."

The President's house was another challenge. Constant air lock and noise drove the maintenance staff to replace the existing air separator in the house with a brass Spirovent 1¼" Junior. Swarnes explains, "We had been battling system problems forever, and the Spirovent solved them."

To date, there are several Spirovents installed or waiting for installation with even more planned for the future. When asked how the Spirovents have made his job easier, Swarnes had this to say: "They have worked very well, and that always makes our jobs in the maintenance field easier. They removed the excess noise and pump cavitation, and cleaned up the water. This has given us peace of mind knowing that the dirt and air are gone from these systems. We look forward to having Spirovents in all of our systems."

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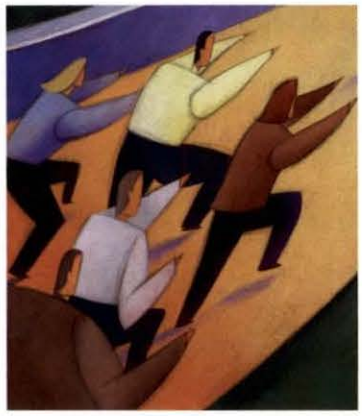
Attracting Digital Natives to APPA

by Philip L. Cox

The topic of this issue of *Facilities Manager*, sustainability, brings to mind a few points I would like to share with readers. While other articles share insights about how critical it is to do all we can to sustain the environment in which we live, in this article I would like to address another aspect of sustainability—sustaining our association and profession.

One of the most effective ways we can sustain our professional development and maintain peak performance on behalf of our institutions is to take advantage of the various learning opportunities made available by APPA. Our association offers a wide variety of resources tailored specifically to the educational environment and designed to keep members on the cutting edge of the facilities management profession. Yet I sometimes wonder if the sustainability of our association is taken too much for granted and that we assume it will always be there as a valuable tool contributing toward the excellence of our institutions.

Consider the membership of APPA. Are the people that make up and lead this wonderful association typical of the populations in the institutions we represent? Are the members characteristic of the populations of the countries we represent? Or, are we comprised by and large, of a narrow band of today's culture? While I am encouraged with the progress we have made in expanding the diversity within APPA, there is still much that



we can do toward improving our inclusiveness.

Some readers have known me to stress the importance of diversity as the right thing from both a moral and practical point of view. I really do not think I have to dwell on the morality of being a welcoming and inclusive society, or institution, or association. However, some of the practical business benefits of diversity, such as making the most of our diversity, may not be so obvious. One such benefit, it seems to me, has to do with the sustainability of APPA as an association of choice. In order to have involved members and leaders remain in our association over the long haul, we need to pay attention to the age diversity of our membership. Succession planning calls for grooming younger members to take over as the mainstay of the organization.

Attracting young members to our membership roles has some challenges. The younger men and women in our profession have grown up as digital natives. They have never known life without personal computers, remote controls, video games, etc. By contrast, for anyone over the age of 30, these electronics have come along during our lifetime as digital immigrants, who have had to adapt to the digital age. The natives have been shaped by digital media, e-mail, the internet, and wireless connectivity—all of which have influenced how they gather information and even how they socialize. Is it any wonder that they have very different expectations about how they wish to pursue their professional development and how they wish to access APPA-offered resources? This is why the hard work of the Information and Research Committee to expand electronic delivery of APPA services is so vital.

I recently attended a talk entitled, "Why our adult children don't attend church?" According to the experts, one of the overwhelming reasons that young people do not attend church is because they are seeking meaningful social connectedness which may not be available in the traditional church of their parents. Their spiritual needs will sometimes take a back seat in deference to their strong social needs. Is there a lesson from contemporary church attendance that can be applied to association membership? Maybe. I think we need to pay attention to the social needs of younger members and try to do all we can to make them feel welcome in our association while being sensitive that their preferences may be vastly different than that of the baby boomers. We need to offer them meaningful social connectedness as they pursue their professional development through APPA.

Because membership matters, the challenge to all APPA members is to be aware of our differences and to seek ways in which we can bridge those differences for the benefit of our profession. To do so will be a rewarding learning experience to all; it will help sustain the association; and perhaps it will energize APPA in ways we cannot even begin to imagine.

Phil Cox is director of facilities management, Cornell University, Ithaca, New York and a past president of APPA. He can be reached at plc4@cornell.edu.

What Is Sustainability? A Reflection on Seven Generations and Beyond

by Walter Simpson, CEM, LEED AP

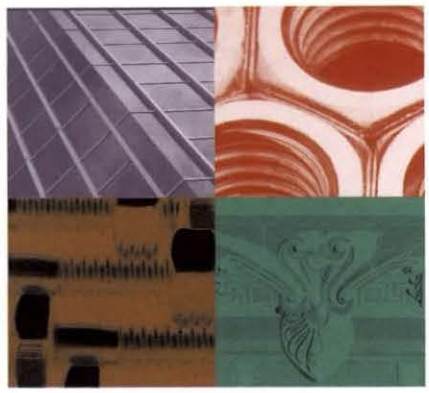
Ah, sustainability! Now there's a word we love to use. Sustainable this. Sustainable that. Everything these days is sustainable!

Sustainability sounds so good, it's hard to resist applying it to everything we think is positive or progressive. It's become a stamp of approval. Unfortunately, the liberal use of this word has led to misuse. The vast majority of activities and projects that are labeled sustainable are not.

Is there harm in that? Yes, I think so—because misuse cuts us off from the term's true power and meaning. It robs us of its benefit as a true measure of our behavior and achievements. It also undermines the ability of this important concept to serve as a guiding light—to help us meet the challenge of building a decent future on a finite planet with an increasing number of people making increasing demands on resources and ecosystems.

Let's start with a simple definition and build from there: for something to be sustainable, it must be able to continue on indefinitely. When taken literally, this is a tough standard. It is a criterion or threshold that few activities and projects can actually achieve.

The United Nations and other organizations have defined international development in terms of sustainability and in so doing have created authoritative definitions of this essential concept. These definitions include social and environmental components. Both are evident in this definition: sustainable development occurs when economic prosperity is pursued in the context of social equity, human rights, peaceful relations among peoples, and ecological balance.



Definitions of sustainability generally presume that there must be justice if we are to survive and prosper over the long run. Thus, it is said that sustainable development requires the alleviation of poverty and a more even distribution of wealth in the world. And no definition of sustainability would make sense without insisting on "intergenerational equity," a fancy name for respect for future generations.

The landmark 1987 Brundtland Report, entitled "Our Common Future," provided a definition of sustainability that has been repeated many times, namely "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs." Native Americans approximate this definition with their law of "seven generations," which requires that decisions be made based on consideration of the consequences of actions over seven generations.

World renowned architect William McDonough has translated the sustainability challenge into a provocative question he poses whenever he speaks about the fundamental goals of design. He asks, in our lives and in our work, how do we love all the children of all species for all time? Clearly, McDonough believes that sustainability involves a shift in attitude and values and an expansion of our sphere of moral concern.

If all of this sounds difficult and complicated, that's because it is. Sustainability requires no less than solving the fundamental problems facing all of humanity so that a decent life on our planet will be possible for all, forever.

But what does all this mean for educational facilities managers? How does the concept of sustainability get translated to our campuses?

While it would be valuable to consider how the teaching and research activities of colleges and universities contribute to or detract from sustainability in its full meaning, the campus sustainability movement has primarily focused on the environmental component of sustainability as applied to campus operations. Perhaps it was felt that this would be challenging enough!

It is important to realize that campus environmental sustainability involves more than just reducing campus environmental impacts. To achieve sustainability we must completely stop damaging and depleting the environment—because even small increments of harm repeated over many years will produce significant degradation at some point in the future and thus undermine sustainability and the lives of future generations.

So, again, we see sustainability's high hurdle. What would it mean to run our campuses without causing any environmental damage? This deserves a lot more discussion and

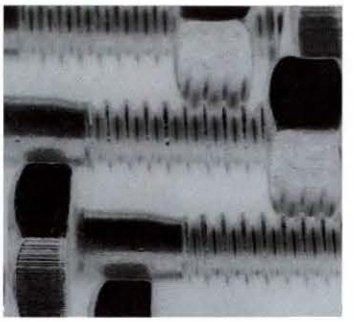
Walter Simpson is energy officer at the University at Buffalo, State University of New York. He can be reached at wsimpson@facilities.buffalo.edu.

study, but in simple terms it most likely means:

- Minimal consumption of all natural resources
- Reuse or recycling of all waste
- No polluting or emitting of wastes beyond what ecosystems can breakdown and harmlessly recycle naturally
- Total reliance on clean, renewable energy technologies

Try to imagine a campus which consumes few natural resources, recycles all waste (what little of it there would be), and abandons climate-changing fossil fuels and instead runs entirely on solar energy. We see that even schools with highly successful green campus programs don't come close to achieving sustainability when defined properly.

This standard of environmental sustainability may seem too high, but what is the alternative? Should we instead compromise the earth and the lives of our children and those yet to come? Sustainability is not just a pretty word. It's a sobering challenge, maybe the ultimate challenge.



To achieve sustainability we must completely stop damaging and depleting the environment—because even small increments of harm repeated over many years will produce significant degradation at some point in the future and thus undermine sustainability and the lives of future generations.

Of course, the above notwithstanding, I know that the term sustainability will continue to be misused. We will use it loosely, hopefully, to mean tending in a genuinely sustainable direction. And we should feel good about the steps we take even if in the grand scheme of things they are small steps.

Let's keep sustainability's true meaning in mind. That will encourage us to have a longer view, work harder, and not settle. Too much is at stake.

Integrating Sustainability in the Learning Community

by Anthony D. Cortese, Sc.D.

For the first time in history, humans are pervasive and dominant forces in the health and well-being of the earth and its inhabitants. *We* are the first generation capable of determining the habitability of the planet for humans and other species.

With a population of 6.1 billion (which will grow to at least 9 billion by 2050), with the earth's climate being changed at an unprecedented and dangerous rate, and with 80 percent of the world's resources being consumed by 20 percent of the world's population, it is clear that we need a *rapid transformation* in awareness, knowledge, skills, and values to create a healthy, peaceful, just, and sustainable society. Most of the world's major international governmental, scientific, and non-governmental institutions as well as many business organizations agree that the changes needed in individual and collective values and action must occur within the next one to two decades, at the latest.

Buildings have a significant impact on the environment, accounting for one-sixth of the world's freshwater withdrawals, one-quarter of its wood harvest, and two-fifths of its material and energy, leaving a large negative impact on the environment and health. Buildings and land use also impact areas beyond their immediate location, affecting the watersheds, air quality, transportation, health, and living patterns of communities.

The resources required to create, operate, and replenish this level of infrastructure are enormous and are diminishing. By all accounts, we will have to double the built environment in the next 50 years to accommodate the demand. This is not possible without a radical change in the design, construction, operation, and location of buildings that seek to mimic the way nature operates—running on renewable energy, using materials in a complete cyclical fashion, and eliminating the concept of waste, using renewable non-toxic materials, and fitting in with natural systems, among other ideas.

Nowhere has the interest in sustainable design been more palpable than in the education system, particularly higher education. For example, nearly 50 new buildings have met LEED standards and 245 more are in the process of seeking LEED certification. The interest on campuses by students, faculty, planners, and facilities managers in having their campuses' infrastructure model sustainability is growing exponentially. Higher education professional organizations, such as APPA and the Society for College and University Planning (SCUP), have been rapidly expanding their efforts to make sustainability an integral part of their mission and programs.

Student-based initiatives have led to important changes in transportation, campus and building design, purchasing and collaboration with local communities on more than 500 campuses. A number of new graduate degree programs in sustain-

***Tony Cortese is president of Second Nature, a nonprofit organization dedicated to promoting the education of sustainability in higher education. He is based in Boston, Massachusetts and can be reached at adcortese@earthlink.net. This is his first article for* Facilities Manager.**

able design, engineering, planning and management have been multiplying across the country while undergraduate concentrations, majors or minors in environmental science, studies, management and policy are now in half the 4 year colleges and universities. And a number of nonprofit organizations and university consortia {e.g., Second Nature (SN), New Jersey Higher Education Partnership for Sustainability (NJHEPS) and the Education for Sustainability Western Network (EFS West)} have emerged to help make sustainability a foundation of all learning, research and practice in hundreds of colleges and universities.

The Challenge

Unfortunately, despite these developments, the overwhelming majority of graduates coming out of higher education do not have the knowledge, skills, and values to lead us down a sustainable path and higher education is not leading the efforts in research and practice to be a model for the rest of society. The current education system is, by and large, reinforcing the current unsustainable paradigm. For example, despite the growing number of architecture schools focusing on teaching sustainable design, none has yet to make sustainable design the default for education and practice for all graduates. The same is true in the education of virtually every intellectual discipline and profession. As David Orr has said, the crisis we face is one ***of***, not ***in*** education.

Why is this the case? Several structural aspects of the current system contribute to the problem. Interactions between population, the environment, and strategies, technologies, and policies for a sustainable future are amongst the most complex and interdependent issues with which society must deal. These issues cross over disciplinary boundaries. Higher education is generally organized into highly specialized areas of knowledge and traditional disciplines. Designing a sustainable human future requires a paradigm shift toward a systemic perspective emphasizing collaboration and cooperation. Much of higher education stresses individual learning and competition, resulting in professionals who are ill-prepared for cooperative efforts.

Moreover, classroom learning is largely separate from operations of the institutions that have an enormous economic, social, and environmental footprint that is largely invisible to students, faculty, and staff. Learning is also generally separate from collaboration with communities of which the institutions are an integral part. And for all the efforts to build new and some existing buildings to meet LEED standards cited above, these represent a drop in the bucket. Higher education is building about 1500+ new buildings and additions and modernizing 2500+ buildings annually. Moreover, expansion of campuses into local communities is huge, often straining already challenging town/gown relations.

The issue is not the ability for higher education to take on this challenge. It is the will and the timeframe for doing so. There are several major barriers to the rapid, systemic change higher education must undertake. First, the efforts are fragmented or isolated. There is no collective mechanism for sharing and building on the efforts that are going on in a number of higher education institutions, academic disciplines, and professional organizations. Secondly, the efforts are too slow in comparison to the problems society faces. The change is incremental, not transformational. Thirdly, existing efforts are still not mainstreaming sustainability—it is still seen as an area for specialists instead of being the context for all learning. Finally, there are too few avenues through which external stakeholders can guide and assist the growth of campus sustainability learning and practice. Transformative change will not come from within the academy without the push and assistance of the external stakeholders such as parents, alumni, local and regional communities, future employers, professional associations, funders of education and research, and accreditation organizations.

Without strategies to make education for sustainability "second nature" for future professionals, businesses, government, and professional organizations will be in a constant

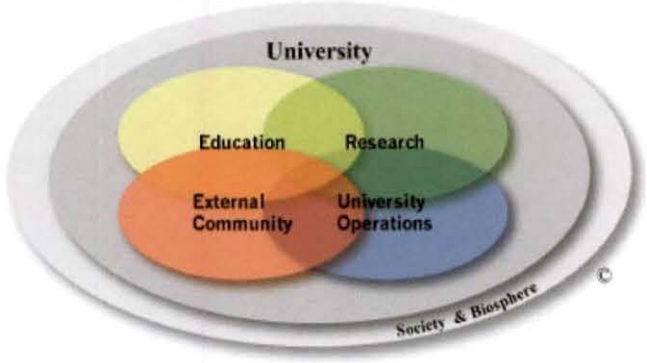
mode of remedial education for existing professionals—an expensive and time-consuming strategy. Remedial education is also not as effective since it involves working against an ingrained mindset that is antithetical to the holistic thinking necessary for sustainability practice. And it is not likely that they will be successful in time to avoid the critical challenges that we currently face and that are rapidly accelerating. A child in kindergarten today will graduate from college in 2020 so we must begin now.

Transforming Higher Education

What if higher education were to take a leadership role, as it did in the space race and the war on cancer, in preparing students and providing the information and knowledge to achieve a just and sustainable society? What would higher education look like? The education of all professionals would reflect a new approach to learning and practice. A college, university or professional school would operate as a fully integrated community that models social and biological sustainability itself and in its interdependence with the local, regional, and global community. In many cases, we think of teaching, research, operations, and relations with local communities as separate activities; they are not.

The content of learning will require interdisciplinary systems thinking, dynamics, and analysis for all majors, disciplines, and professional degrees. Understanding how the

Higher Education Modeling Sustainability as a Fully Integrated Community



natural world works and learning how to have human technology and activity mimic and live within the limits of natural systems would be core to all learning.

The context of learning will change to make human/environment interdependence, values and ethics a seamless and central part of teaching of all the disciplines, rather than isolated as a special course or module in programs for specialists. All students will understand the ecological services that are critical for human existence, how to make the *mostly invisible* ecological and social footprint of human activity *visible*, as benign or, as positive as possible.

The process of education will emphasize active, experiential, inquiry-based learning and real-world problem solving *on the campus and in the larger community, including government and industry*. It is widely known that for long-term retention of knowledge, skills, and values, we retain 80 percent of what we do and only 10 to 20 percent of what we hear or read. A campus would "practice what it preaches" and make sustainability an integral part of operations, planning, facility design, purchasing and investments, and tie these efforts to the formal curriculum.

Because the university is a microcosm of the larger community, the manner in which it carries out its daily activities is an important demonstration of ways to achieve environmentally responsible living and to reinforce desired values and behaviors in the whole community. This would include an analysis of the full impact of the throughput of resources and energy at the university, the life cycle impact of all the operations and would embrace a strategy for developing indicators to measure the impact and progress in making changes to move to the positive. This will necessarily lead to discussion of issues like energy and water consumption, recycling, green buildings, transportation of people and goods to and from the campus, sustainably preferable purchasing, etc. Transparency is important here. We need new indicators of movement toward sustainability and institutional success because we measure what we value and manage what we measure. As always, the role of faculty and students and connecting these efforts back to student learning, research, and action are critical.

A campus would "practice what it preaches" and make sustainability an integral part of operations, planning, facility design, purchasing and investments, and tie these efforts to the formal curriculum.

Finally, the **learning and benefit to society** of higher education forming partnerships with local and regional communities and businesses to help make them socially vibrant economically secure and environmentally sustainable will be a crucial part of successful higher education. Higher education institutions are anchor institutions for economic development in most of their communities. The 4,100 higher education institutions (half are community colleges) in the United States alone are, themselves, large economic engines with annual operational budgets totaling $280 billion in 2002, according

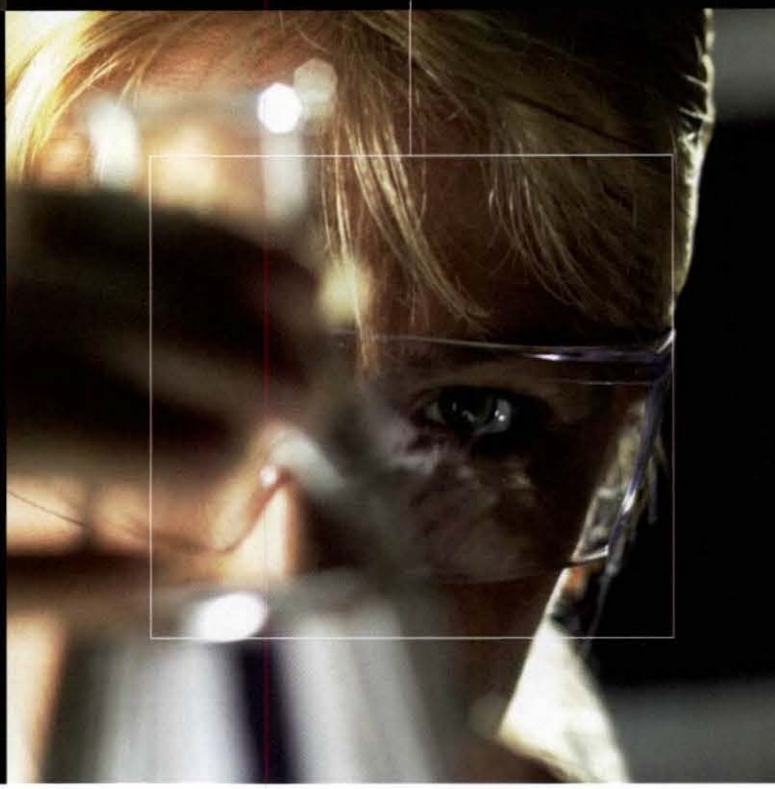
Continued on page 34

Are...

...we adequately tracking organizational occupancy and recovering indirect costs associated with funded research?

When...

...was the last PM performed on this equipment?



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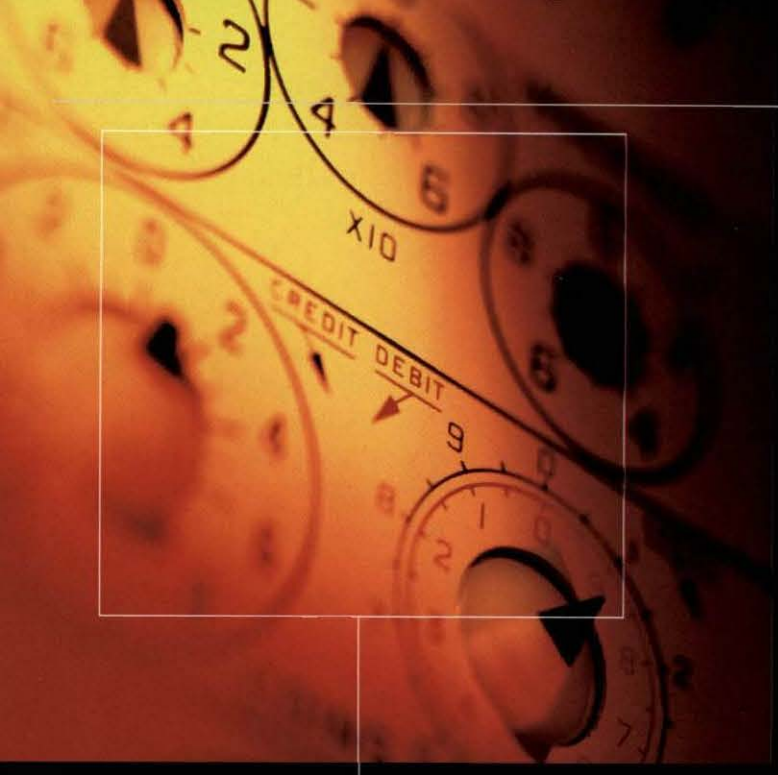
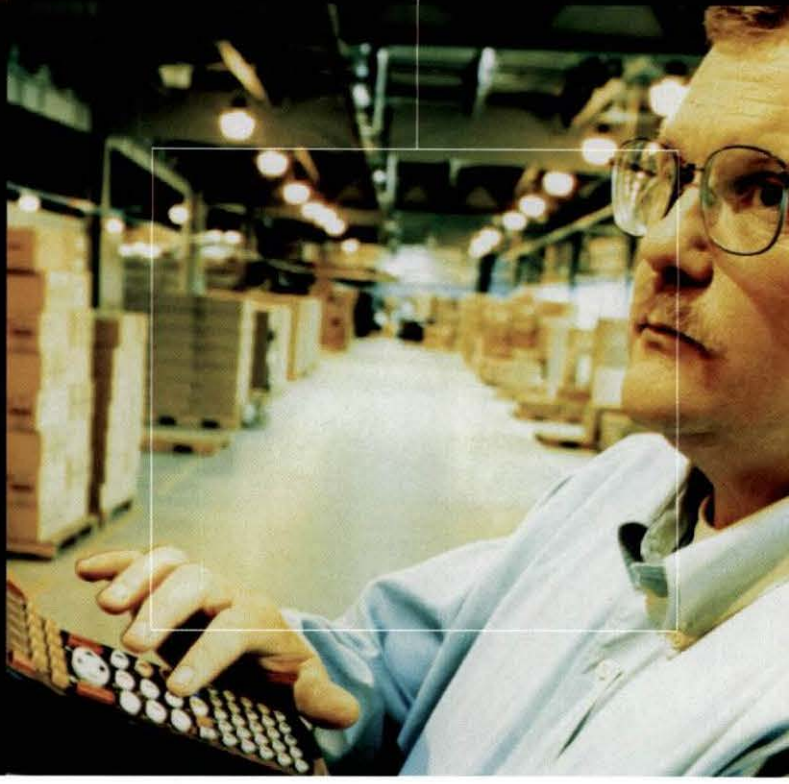


Where...

...is our inventory, and do we have the right materials on hand?

How...

...much are we spending on utilities each month?



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We can make a quantum leap forward if we can harness all of the energy and interest of the students, professional, academic, business organizations, communities, and state and federal government. We have a window of opportunity here at an auspicious time for humanity.

Continued from page 31

to the *Chronicle of Higher Education*. This is greater than the GDP of all but 25 countries in the world and 2.8 percent of GDP.

Imagine the economic leverage if universities were modeling sustainability by purchasing sustainably preferable products and services and how much greater the benefit could be if they were doing joint purchasing with local communities. Utilizing faculty and students to conduct the research, as an integral part of the learning experience would greatly enhance their education and promote a strong sense of connection to and caring for the local and global communities and to the ecosystems of which they are a part.

A Strategy for Transformative Change in Higher Education

Second Nature, a nonprofit organization with extensive experience in education for sustainability, proposes the development of a bold strategy to make sustainability be the foundation for the education for all design and planning professionals—building and landscape architects, engineers, interior designers, community, land use and transportation planners, and others—by the year 2015, *at the latest*. This unprecedented strategy will be implemented through the formation of a large national coalition of professional, business, academic, governmental, student and nonprofit organizations who will work individually and collectively to achieve this unprecedented goal.

This coalition will attempt to do several things that have never been done before:

- Connect all the relevant *internal* and *external* stakeholders for the education of design and planning professionals to develop a coordinated national vision and strategy to make sustainability a foundation of all education and practice.
- Assess and monitor what is happening to change the education of these professionals. (There is no national assessment on the collective impact of all current educational efforts nor whether they are adequate to reach the above goal.)
- Develop mechanisms for sharing knowledge and information so that there can be rapid improvement and make the educational institutions and the external stakeholders a true learning community.
- Work on understanding and overcoming internal and external barriers and create incentives to making sustainability a foundation of education and practice as rapidly as possible.
- Use innovative means to help all professionals and business, government and the public understand what sustainability means and why it is necessary to make it a societal and educational goal.

The Potential for Success

Several of the potential partners with whom we have spoken think it facilitates an unprecedented degree of collaboration among professional organizations involved in planning, design and construction and the academic institu-

tions that train their professionals and significantly help the professional organizations increase their effectiveness, visibility and achieve their goals more rapidly.

If we build the coalition with active involvement by all members as suggested above, it will be extremely cost effective because it calls for a very small budget relative to the magnitude of the task and it depends on the active involvement of all the organizations inside and outside academia working in concert.

The potential synergy from the coalition will provide both an effective compass in assessing and directing our individual and collective efforts to a achieve the unprecedented goal of making sustainability the default for the education of all design, engineering and planning professionals in a decade.

Planning is now underway for United Nations' Decade of Education for Sustainable Development, which is 2005-2015—the time frame for this project. There will be great international interest and the possibility of reaching the coalition goals internationally and the creation of economic opportunity worldwide for coalition members.

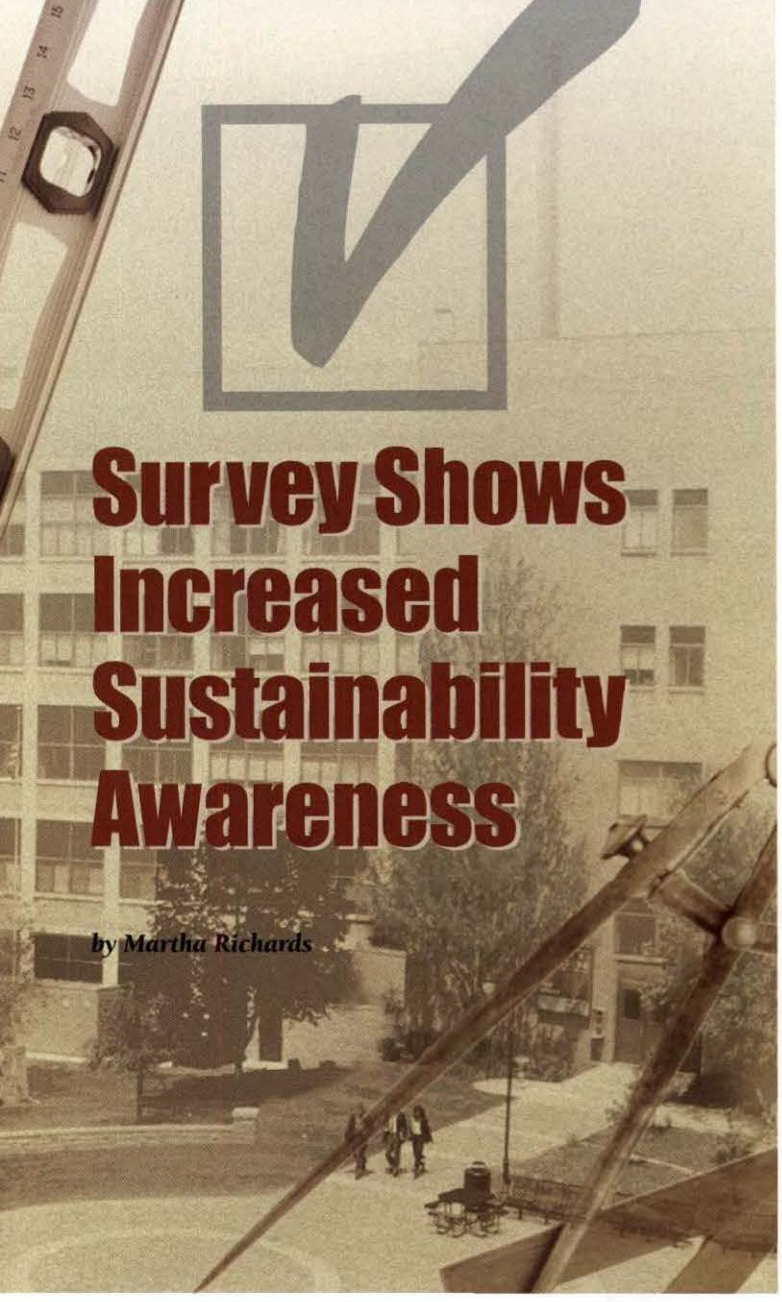
The coalition will create a prototypical partnership involving academia, professional associations, government, NGOs, corporations, and communities that is necessary for the transformation of the collective mindset to make sustainability "second nature."

Society has finally reached a kind of "tipping point" in professional associations, many business and design organizations, the construction and materials industries, in many academic institutions, and especially among students.

Conclusion

This project will have a huge multiplier effect in advancing sustainable communities, economies, and public policy through an unprecedented strategy to link all the external and internal stakeholders for education of future design, engineering, and planning professionals. Society has finally reached a kind of "tipping point" in professional associations, many business and design organizations, the construction and materials industries, in many academic institutions, and especially among students.

We can make a quantum leap forward if we can harness all of the energy and interest of the students, professional, academic, business organizations, communities, and state and federal government. We have a window of opportunity here at an auspicious time for humanity.



Survey Shows Increased Sustainability Awareness

by Martha Richards

In September 2004, Reed Research Group and *Building Design & Construction* magazine conducted a survey among professionals involved in the field of education to understand their opinions, perceptions, and actions regarding sustainability and "green" colleges and universities. Facilities, design, and planning professionals in the university setting were targeted. APPA and SCUP (the Society for College and University Planning) participated in this university study.

This survey was conducted online. Each organization sent their members an e-mail inviting them to participate in this study. A total of 513 respondents participated in the study. Respondent participation included 296 from SCUP (58%) and 217 from APPA (42%).

The following were the objectives of the study:

- To establish respondent familiarity with green building terms, as well as level of expertise in the area
- To determine the amount of consideration given to sustainable/green design when contemplating major campus building projects
- To explore perceived cost differences associated with building green and the acceptable differential for gaining approval of a sustainable/green building
- To understand perceived barriers to incorporating sustainable design into university projects
- To determine the percentage of respondents that have actually incorporated sustainable/green concepts into their university/college designs and to define the concepts
- To pinpoint who drives the primary impetus to incorporate sustainable/green elements
- To explore the role of sustainably designed or green buildings as a teaching tool

Findings

Respondents have a high level of familiarity with green building terms and principles. The majority are at least somewhat familiar with the term "sustainable design" or "green building" and/or the LEED (Leadership in Energy and Environmental Design) rating system.

Respondents expressed differing levels of expertise at their institutions with regards to green building or sustainable design. Nearly three-fifths of respondents indicated they are at least somewhat experienced in the area, while nearly one-third indicate little experience but a definite interest. Virtually no respondents expressed little interest in the topic.

Nearly three-fourths of respondents believe that sustainable/green buildings are more costly to build or develop. Although more costly to develop, respondents find a cost differential of 6 percent as acceptable to gain approval of a sustainable/green building at their institution.

The costs associated with green buildings prove to be the biggest barrier to acceptance in the university setting. Over two-thirds of respondents indicate "adds significantly to initial costs of construction" as a barrier to sustainability. Priority of programs also is a common barrier, with nearly half indicating "other program needs more important than green building."

Nearly three-fourths of respondents have actually incorporated sustainable/green concepts in their recent university/college building designs. Energy management, daylighting, and automated lighting controls are the most popular concepts currently being incorporated.

The impetus to incorporate green elements came from a variety of sources among those respondents who indicate they have incorporated these concepts. One in three indicate the primary impetus came from the facilities planner or director,

Martha Richards is research director for the Reed Business Information's Reed Research Group, Newton, Massachusetts. She can be reached at mrichards@reedbusiness.com; this is her first article for* Facilities Manager.** ***We also thank Rob Cassidy of* Building Design & Construction *for his assistance on this project.

while nearly one-fifth indicate it came from university/college officials or the architect/designer.

When it comes to leading the green effort, nearly three-fifths of respondents feel the institution's administration should be at the forefront. Nearly one-fifth feel the architect should lead the effort.

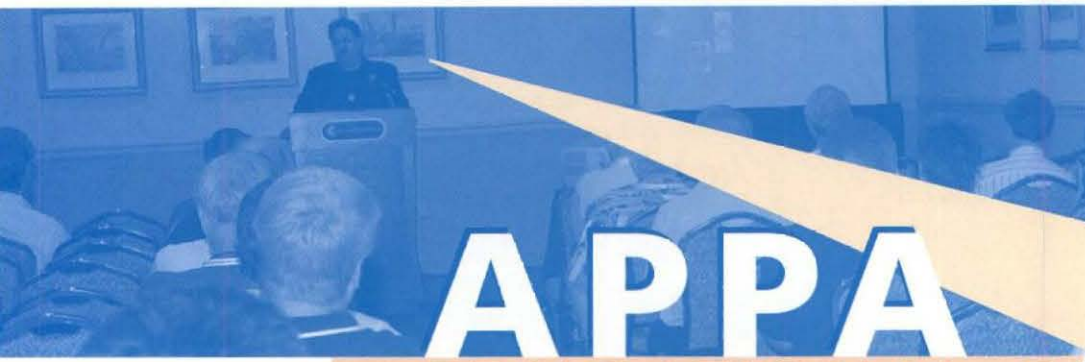
Sustainability as a Teaching Tool

Nearly four-fifths of respondents believe sustainably designed or green buildings can serve as a teaching tool for students. As one respondent states: "Many of the students who go out to industry will have an accepted notion of the viability of green buildings if they have actual experience of being in one."

Following are some of the statements made by APPA members when asked, "Do you believe sustainably designed or green buildings can serve as a teaching tool for students? How?"

- "Architecture and interior design schools directly experience green building. Any areas of interest can learn from the general design concepts."
- "By building a culture of awareness for the next generation."
- "By walking the talk. We need to lead by example."
- "Holistic approach to sustainability is essential for long-term commitment."
- "If the students have an actual example of this type of building that they can see in action, they become aware of its advantages and disadvantages based on their experience with it. This exposure will determine the program's longevity as these students eventually become the next generation of decision makers to carry the program forward or to discard it."
- "The design and construction can teach how sustainability can be created and about the life cycle value. It should teach innovation and open mindedness as well."
- "This is a no-brainer; they ain't making no more 'earth.' If we are going to survive in this environment, we have to go in this direction. Students are the future, so we need to be out front setting the example."
- "Just as recycling needs to be taught to first graders so their parents will catch on, sustainable design needs to be part of the upcoming generation's vocabulary."

"Do you believe sustainably designed or green buildings can serve as a teaching tool for students?



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AND

Campus Sustainability

by Terry Calhoun

For several years now, forward-looking professional associations like APPA and SCUP (the Society for College and University Planning) have identified "sustainability" as an important area for expending some of their energies. There is a confluence of many things that has led to a growing recognition of the importance of sustainability and technological and knowledge advancements that allow us to intervene in traditional practices and do things "green" instead of, say, "sooty" or "brown."

What most scientists have known for some time is now well-known by most of the rest of us—that few except partisan ideologues now doubt that climate change is real, and that human activities have a major impact on global warming. When the average person reads about possible polar bear extinction and dying coral reefs, dead zones at the mouths of large rivers, and the effects of the Emerald Ash Borer currently destroying ash tree populations (not so long after Dutch Elm Disease did the same for our majestic campus elms), then it is easy to see the need for change.

***Terry Calhoun is director of communications and publications for the Society for College and University Planning, Ann Arbor, Michigan. He can be reached at terry.calhoun@scup.org. This is his first article for* Facilities Manager.**

But where does that change start? Where does it come from? One very important place is from higher education.

- Higher education is where much of the scientific research that lets us measure and demonstrate environmental issues originates; and it's also where technology and other advances help us find ways to make positive change.
- Campus leaders recognize that campuses themselves are long-lasting, sustainable organizations, and actually take the long view with regard, for example, to our campus and building design. We know that our new building will still be around and in use 50 years from now and that we will be the tenant and owner, so we're not into the fast and profitable turnarounds necessary in the modern corporate world, where success is measured by stock prices and earnings every three months.
- Higher education trains the young people who are the leaders and the professionals of the future. It's where they can be instilled with sustainable values and attitudes, and in the case especially of those training to be design, engineering, and construction professionals, are being trained in the sustainable tools—such as an understanding of green design or green chemistry—that industries are beginning to realize that they need.
- And last, but I think not least, is the fact that campuses are right now loaded with the fairly idealistic baby boomers who, close to retirement, are finding themselves in relative positions of power in college and university administrations. Positions which allow them, if they choose, to make decisions and lay the groundwork for even more significant advances during the years to come.

So, campuses are where problems are recognized and solved, where the leaders of the future are, where there are leaders who take the long view with regard to institutional infrastructure, where there are motivated and eager advocates coming from student and faculty ranks, where sustainability can be modeled while it is being taught to future generations of leaders, and where many professionals of a certain age are in a position to do some real good before we ride off into the sunset. Quite a confluence, eh?

We've been watching the trends and happenings in sustainability in higher education for some time now, particularly during the past year as SCUP prepared for Campus Sustainability Day 2 in October 2004. Here are some, not all, of the interesting and important things you're likely to see happening around you and interacting with in 2005.

LEED

Before I even get further into what the U.S. Green Building Council (USGBC) is up to that will affect you, let me clear up what I hear as a common confusion. It is "LEED" certification not "LEEDs" certification. The root of it all is something known as the Leadership in Energy and Environmental Design (LEED) program. There is no easier way to tell someone that you don't know what's going on than by referring to "LEEDs" instead of LEED.

The USGBC developed the LEED program to tap into the creative and competitive aspects of the personalities of architects and designers to create a huge economic force for improving the sustainability of newly built buildings. Buildings qualify for a basic LEED certification, or for levels going up through Silver, Gold, and Platinum designations. The architects who want to convince clients that they can design these buildings also compete in standardized examinations to become LEED-certified professionals.

Following are two indications of how successful LEED has been:

- In 2001 there were 5 LEED-certified projects; by 2002 there were 38; by 2003 there were 82; and as of October 2004 there are now 162. And there are 1,614 projects "registered" with LEED, which refers to projects that are seeking LEED certification upon completion.
- Nearly 20,000 architects, engineers, contractors, and environmentalists have become LEED Accredited Professionals. This is growth from zero less than half a decade ago.

The LEED certification that has been in place for four years now is LEED "NC" for "new construction." But there are additional designations coming down the pike that will affect you even more directly. Coming soon are:

- LEED-EB for "existing buildings";
- LEED-CI for "commercial interiors"; and
- LEED-CS for "core and shell."

EB and CI are already underway, CS is being developed. Also being developed is a LEED certification for entire campuses rather than just individual buildings, but the folks working on that are finding it to be a rocky road with lots of thorny issues to be addressed.

Most of what you'll hear about in 2005 is LEED-EB, which is aimed right at upgrading the operations and management of existing buildings, because there are so many of them and because about 75 percent of the lifecycle costs of buildings actually come from operations and maintenance—not design and construction.

To gain LEED-EB certification, a building must gain "points" based on considerations such as:

- The percentage of annual purchasing of cleaning products that meet various green standards;
- Documenting productivity benefits, such as worker absenteeism and health care costs; and
- Tracking changes over time in overall building operating and maintenance costs.

It doesn't take a lot of imagination to see where these kinds of things are likely to impact your work life. A lot of what's involved in greening an existing building is simply keeping better track of and making more informed choices about procedures and purchases. That's one reason why the National Association of Educational Buyers (NAEB) is also among the leaders in higher education professional associations addressing sustainability.

The Growing Body of Campus "Green" Professionals

For years, there have been student movements and activist campaigns. There have been faculty in specialized disciplines who sometimes create what are intended to be integrated environmental studies centers and who turn out graduates prepared to work in environmental fields. There are also scientists in various disciplines who research climate change and work on tools to address it. But now there's a new kind of campus staffer—the "green" professional.

In October I attended the North American Conference on Sustainability in Higher Education. My role was to present a paper on how higher education professional associations are working together to impact sustainability in higher education. I expected that I would be speaking to and hearing from primarily sustainability advocates from all the usual places (see the above paragraph).

Those folks were there, of course, but I was astounded at the degree of interconnectedness they are beginning to introduce "back home" on campus among themselves, across disciplinary and departmental boundaries. And I was outright shocked at the clear existence in the nearly 450 conference attendees of a core of "green professionals" on campuses. The sessions at this conference were quite a bit like those you might see at the SCUP or APPA conferences—descriptions of how teams of people, often quite diverse, work to cause of

manage change on campus. Change that often saves the campus money at the same time as it results in cleaner, healthier, more energy efficient, and more comfortable surroundings for students, faculty, and staff. Not a lot of head-banging or wailing about the need for change—just a lot of professionals sharing ideas about how to do their jobs better.

Why is this important to you? Well, many of those new professionals are finding their homes in facilities departments; often with funding provided by demonstrated savings in energy efficiencies. And there are a number of suggestions to provide more such funds for more such professionals by building them into capital expenditure budgets, or by soliciting alumni for donations to special sustainability funds. A campus' demonstrated commitment to sustainability in its operations is also fast becoming one check list item that can attract new students, as well.

Specific Reports and Projects

There's not room in this article to go into a lot of details, but I am recommending several places you can go to on the Internet to find out more about such specific projects and case studies. Before I do so, as a "resource list" at the end, here is just a bullet-point list of a handful of the projects and case studies out there for you to learn about:

- Getting sustainability perspectives into engineering curriculum at schools like Royal Roads University, Cal Tech, Northwestern University, and the Colorado School of Mines;
- Using buildings as learning tools—taking off on the concept, already in use on some campuses, of leaving interiors partially exposed—especially in architecture and engineering schools—so that students are visually entertained regularly by "what's behind the walls."
- Building sustainability systemically into the institution at such as places as Middlebury College, Seattle University, and the new University of California-Merced campus.
- How sustainable design can have a strong impact even on modest projects such as at Linfield College, George Fox University, and Scripps College.
- Alternative transportation and fuels programs such as the bicycle program at the University of Colorado and the "Coolest way to School" program in Portland, Oregon.
- More and more sustainability requirements are being written into RFPs, demanded system wide by higher education systems, and even statewide (such as the New Jersey Higher Education Partnership for Sustainability).

Have no doubt about it, you're going to get sick of hearing the word "sustainability" in 2005. Try to think of it as the architects at SCUP-39 in Toronto last summer told me: "Terry," they said, "it is no longer 'green' design it's just **good** design."

Early findings on the work already done on campuses are showing us that sustainable buildings and practices are often simple good buildings and practices. We're just paying more and more attention, in a systematic way, to design, maintenance, and operations—and the side-effect of doing all of what we do better may itself justify all the work and thought that's going into it.

Campus Sustainability Day

Campus Sustainability Day is aimed at bringing people on campus together—from across academic and professional disciplines and from across departmental boundaries—to annually display, discuss, and celebrate their various accomplishments at greening the campus.

It's a day, intended to be late in October each year, which we hope campuses all over North America will use as the core of half-day or all-day local celebrations, panels, brown bag lunches, and so forth.

Since sustainability is by its nature an integrated, systems-type effort, it is hoped that faculty researchers, faculty advocates, students of all sorts, and administrators from budget and planning and facilities offices and the like can spend some time together talking about how their work affects a campus's sustainability.

Following each year's Campus Sustainability Day a summary white paper of what's been accomplished on campus that year and a projection of what to expect in the next will be broadly published.

Campus Sustainability Day for 2005 is on Thursday, October 26.

A Few Resources

Building Design & Construction's 2004 Progress Report on Sustainability
http://www.bdcmag.com/newstrends/bdc04White_paper.pdf

Campus Sustainability Day
http://www.scup.org/csd/3/

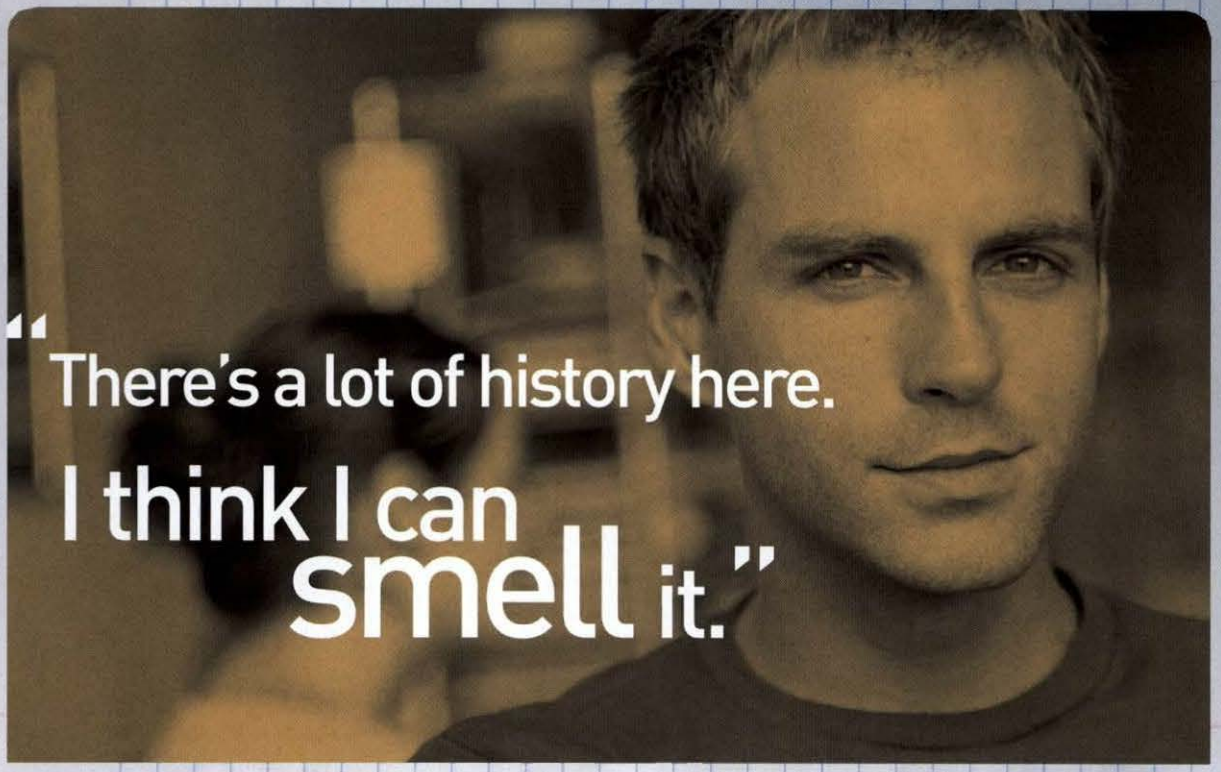
EFS West
http://www.efswest.org/

EFS West's North American Conference on Higher Education and Sustainability
http://www.efswest.org/conference/index.html

National Wildlife Federation's Campus Ecology Project's Campus Environmental Yearbook
http://www.nwf.org/campusecology/dspYearbook.cfm

New Jersey Higher Education Partnership for Sustainability
http://www.njheps.org/

United States Green Building Council (USGBC)
http://www.usgbc.org



The look of a historic campus can be a real draw for a college student. The smell is another story. Yes, students today expect a lot from a school. They love your ivy covered walls, but the technology inside those walls factors into their decision, too. Technology that creates environments that are comfortable, well-ventilated and safe. Thing is, more and more administrators face a serious backlog of deferred maintenance that hinders efforts to attract the best and brightest. Johnson Controls can help. We have the experience and know-how to create the finest, most advanced environments for learning and living. And we have innovative financial solutions that make improvements and new facilities possible. Best of all, you end up with the kind of campus today's students have a real nose for. For details, call us at 1-888-214-0916.

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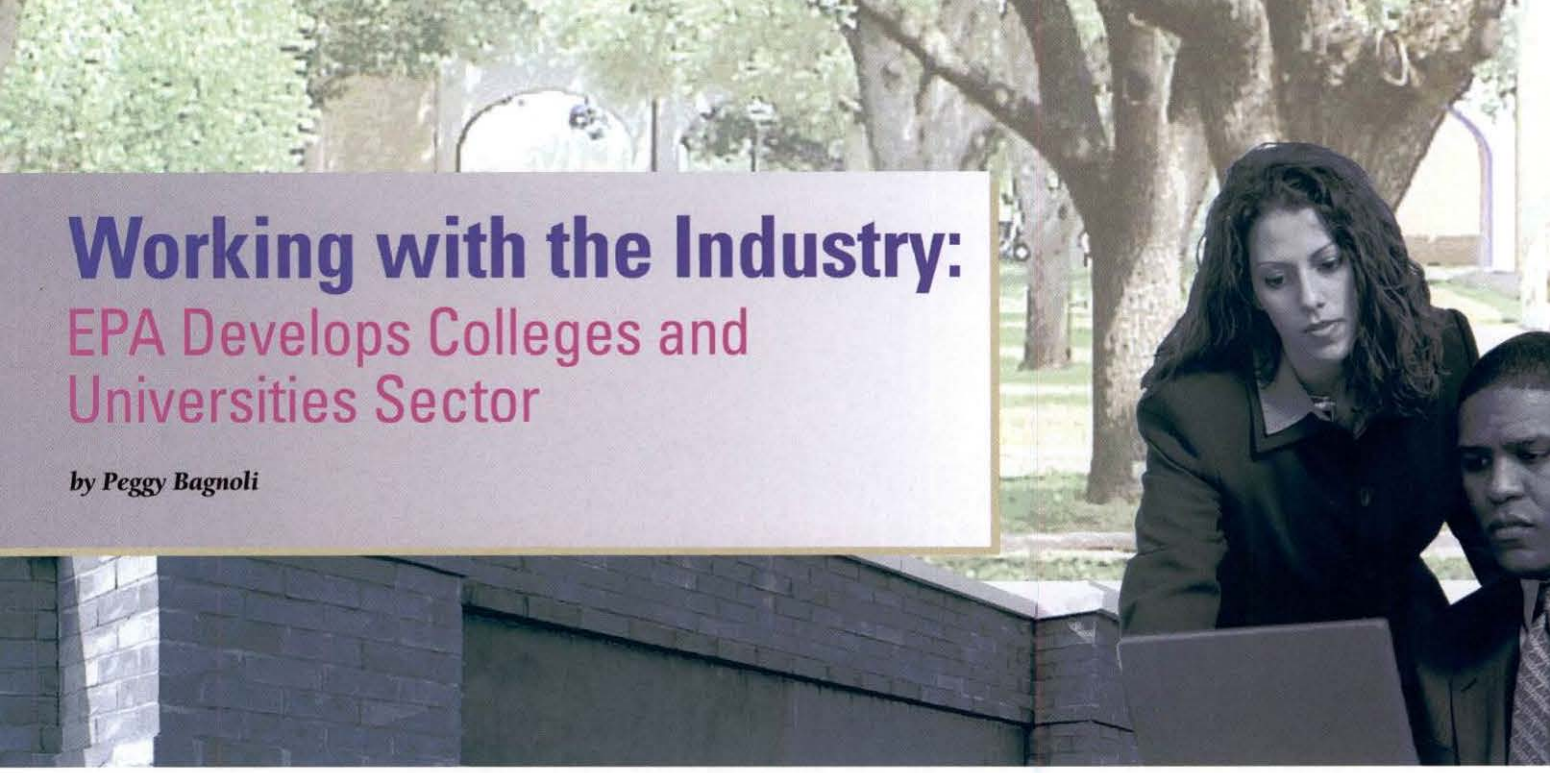


Working with the Industry:

EPA Develops Colleges and Universities Sector

by Peggy Bagnoli

The Sector Strategies Program of the U.S. Environmental Protection Agency (EPA) works collaboratively with 12 sectors to improve environmental performance while reducing regulatory burden and providing an expert staff liaison for each sector in the program. Current sectors included in the program are construction, hospitals, and local governments, among others. The Sector Strategies Program is part of the National Center for Environmental Innovation at the U.S. EPA's Office of Policy, Economics, and Innovations (OPEI).

On May 1, 2003, the Colleges and Universities Sector was selected to become one of eight new sector partners in the Sector Strategies Program. This partnership is an exciting opportunity for the U.S. EPA and colleges and universities to work together to achieve sector-wide environmental gains through innovative actions. The Sector Strategies national liaison works with six college and university national organizations to develop sector-specific approaches to assist colleges and universities in advancing the use of environmental management systems, reducing regulatory performance barriers, and measuring environmental progress.

Coordinating Committee

Six organizations have partnered with the U.S. EPA in the Colleges and Universities Sector program. Each partner has designated a sector contact. The sector contacts serve as the Coordinating Committee, with the Sector Strategies liaison and other EPA staff as technical advisors. The current committee members are:

- Bruce Backus (Chair), Howard Hughes Medical Institute (HHMI)
- Anne Gross, National Association of College and University Business Officers (NACUBO)
- Cheri Hildreth, Campus Safety Health and Environmental Management Association (CSHEMA)
- Lander Medlin, APPA
- Peter Schneider, Campus Consortium for Environmental Excellence (C2E2)
- Shelley Steinbach, American Council on Education (ACE)

Work Groups

In November 2003, the Coordinating Committee met in Washington, D.C., and formed three work groups to tailor efforts on the priority areas of the sector initiative: Environmental Management Systems (EMSs), Performance Measurement, and Regulatory Innovations. The work groups were formed to reflect the diverse nature of the Colleges and Universities Sector. Participating members are from nonprofit groups and colleges and universities of all sizes, both public and independent, with widespread geographic representation. The Sector Strategies liaison and other EPA staff serve as technical advisors to the work groups as well as the Coordinating Committee. More information on the College and University Sector can be found at www.epa.gov/sectors/colleges.

Three Priority Areas

The EMS Work Group:

Harvest Collier, University of Missouri-Rolla (Chair)

Environmental Management Systems represent a unique opportunity for colleges and universities to systematically

***Peggy Bagnoli works in the Sector Strategies Division of the U.S. Environmental Protection Agency, Washington, D.C. She can be reached at bagnoli.peggy@epa.gov; this is her first article for* Facilities Manager.**

manage their environmental impacts and future goals. The EMS Work Group developed a strategy to deliver EMS outreach tools, training resources, and support to promote the development of EMS on college and university campuses. The Group is focusing on strategies to address 1) colleges and universities with no previous consideration of implementing an EMS; 2) those that have made EMS considerations but require assistance; and 3) those that have already begun the EMS development and implementation process but could benefit from specific and more quantitative EMS strategies.

Work group members have recently developed two documents: a letter to college and university presidents/chancellors that promotes the implementation of EMS and encourages university presidents/chancellors to take actions to promote environmental stewardship within their organizations; and a one-page business case titled, "Environmental Management Systems (EMS): Continually Improving Performance." This document was developed to raise awareness about the benefits of an EMS, and to share testimonials from universities that have realized many of these benefits. In addition, the EMS work group has recently established a national website designed to assist a wide range of colleges and universities with the planning and implementation phases of EMS development.

A number of colleges and universities have already begun EMS programs on their campuses, including:

- Washington State University
- Michigan State University
- University of Texas MD Anderson Cancer Center (EH&S Management System)
- University of Missouri-Rolla
- University of Massachusetts-Lowell

For more information on this group, contact Harvest Collier at hcollier@umr.edu. View the EMS website at campusems.org.

Performance Measurement Work Group:
David Wergin, University of Colorado-Boulder (Chair)

The Performance Measurement Work Group is currently exploring creative ways to measure sector-wide environmental and economic progress using performance indicators, success stories, and other tools. Currently, the work group is studying energy use, greenhouse gas emissions, hazardous waste, solid waste/recycling, and water use as key environmental performance indicators. The work group is gathering five years of retrospective data to explore the challenges of data collection and the potential value of the information. The new performance measurement poster is available at

www.C2E2.org and includes all of these measurements except energy use.

The work group is preparing a draft workbook for review and comment by a larger, more diverse group within the college and university sector.

Examples of colleges and universities currently measuring their environmental footprint:

- *Case study on environmental performance reporting from the Best Management Practices Catalog:* The Campus Consortium for Environmental Excellence developed this environmental Best Management Practices Catalog for colleges and universities through a funding from EPA New England. This case study describes the reporting approaches used by the University of Vermont, the University of North Carolina, and Yale University. It also provides resources for colleges and universities that are interested in reporting environmental performance on their campuses.
- The University of Vermont's Environmental Report Card
- UNC Chapel Hill Campus Sustainability Report 2003
- Sustainability Assessment and Reporting for the University of Michigan's Ann Arbor Campus
- University of Florida Sustainability Indicators Report
- Pennsylvania State University Indicators Report 2000
- University of Central Florida
- Bowdoin College Environmental Impact Audit 2000
- Tufts University Green House Gas Emissions Inventory for 1990-1998

For more information on this work group, contact Dave Wergin at dave.wergin@colorado.edu.

Regulatory Innovation Work Group:
Bill Diesslin, Iowa State University (Chair)

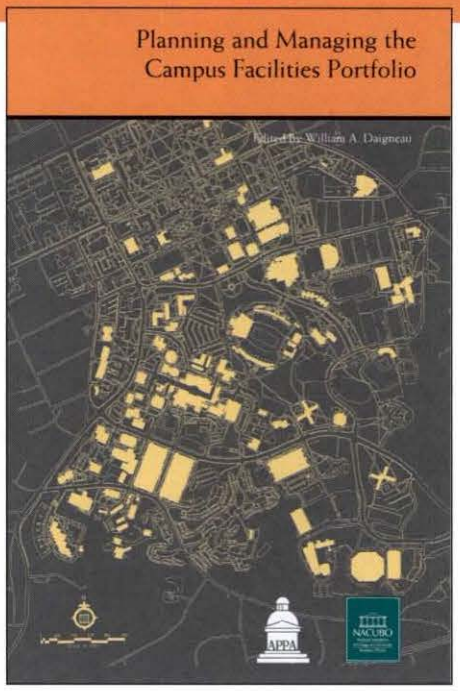
The Regulatory Innovations Work Group is currently focusing on the Resource Conservation Recovery Act (RCRA)/lab waste issues. The work group is preparing a business case to summarize and justify the need for regulatory reform for laboratories in the academic community. As needed, the group will continue to support the Coordinating Committee's efforts to develop a proposal, strategy, and analysis for a RCRA/lab waste rulemaking. Upon completion of the RCRA project, future efforts will focus on other regulatory challenges such as the Clean Air Act or Spill Prevention Control and Countermeasure requirements.

For more information on this group, contact Bill Diesslin at wmdiess@iastate.edu.

To view position statements from the Colleges and Universities Sector Partners, visit the Campus Safety Health and Environmental Management Association at www.cshema.org and the Howard Hughes Medical Institute at www.hhmi.org.

The three work groups and the Coordinating Committee held the Sector's first in-person meeting in July 2004 in Chicago after the annual Campus Safety Health and Environmental Management Association conference. Each work group provided a brief overview of their goals and objectives and also provided the status of their activities. The second annual meeting of the Colleges and Universities Sector is tentatively scheduled for July 2005 in Philadelphia, Pennsylvania.

Planning and Managing the Campus Facilities Portfolio



Edited by William A. Daigneau, chief facilities officer at the University of Texas M.D. Anderson Cancer Center, this book is based on one simple premise:

The campus and facilities of a college should be managed using the same principles as any other investment in an institution's financial portfolio!

An outgrowth of APPA and NACUBO's Institute for Facilities Finance program, *Planning and Managing the Campus Facilities Portfolio* addresses the totality of managing the facilities investment — an issue that is even more important today than in the past because:

- Resources are scarce and likely to become more scarce in the future.
- Challenges in technology and environmental issues exist today that never did before.
- Changes in demographics and society are reshaping the availability of resources and how they are deployed.

Written by top facilities and finance professionals in the field, the book is divided into three general sections, which are presented in the order in which critical issues must be addressed.

Part I covers the tools required to answer the question: "Where Do We Want To Go?"

Part II presents the key components used to answer the question: "Where Are We Now?"

Part III completes the trilogy by guiding the reader through the elements needed to answer the question: "How Do We Get There?"

This is a MUST book for college presidents, trustees, business officers, and facilities professionals!

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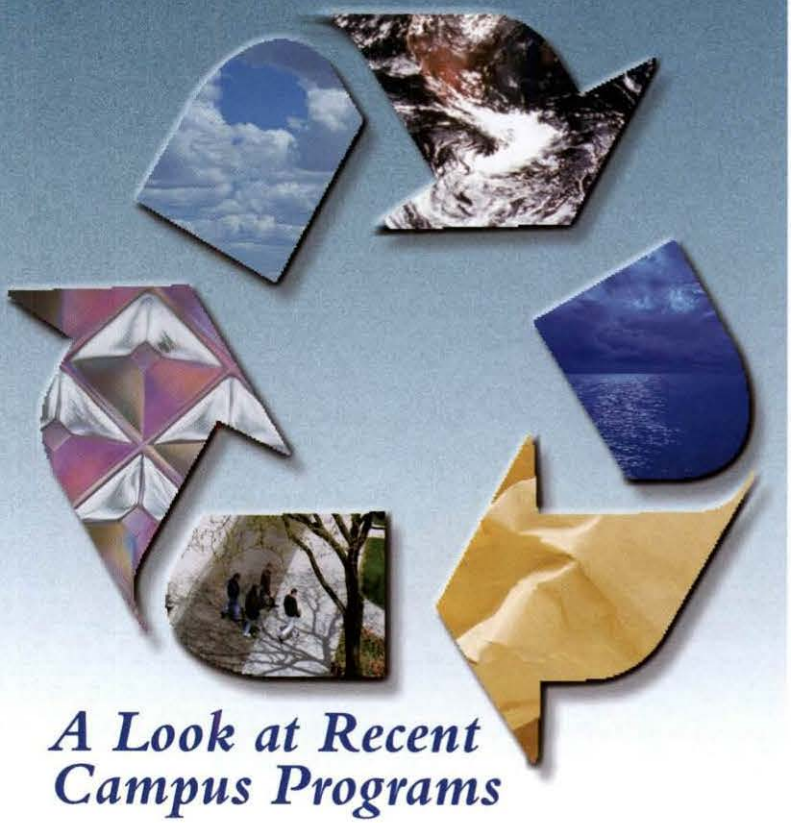


A Look at Recent Campus Programs

by R. Marc Fournier

Colleges, universities, and schools have been recycling for years. Some programs have been amazing successes while others have floundered, and the success of individual programs have expanded or contracted as political and financial climates changed.

This article provides a look at how 36 programs across the United States have fared over the past five years and where they expect to go in the near future. It also presents a glimpse into recycling at the University of Edinburgh in Scotland.

Marc Fournier is senior environmental specialist at Haley & Aldrich, Inc., a consulting engineering firm based in Boston, Massachusetts. Fournier is a LEED 2.1 Accredited Professional and was an author of the APPA/NRPA/PGMS book,* Operational Guidelines for Grounds Management. *He can be reached at mfournier@haleyaldrich.com.

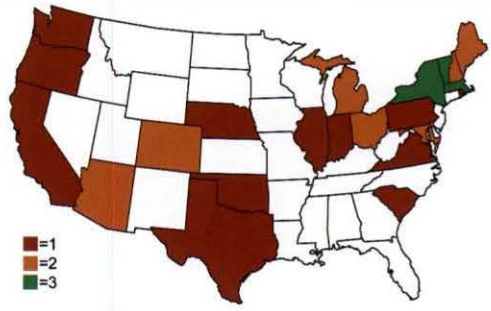
Data Collection

The first step in the project was to collect data from as many colleges and universities across the country as possible. To see if any research had been done recently, contacts were made with APPA, the National Association of Educational Buyers (NAEB), and the National Recycling Coalition College and University Recycling Council (CURC). No one was familiar with any recent surveys, so a draft survey was designed and circulated to peers in the industry. The goal was to design a short, easy-to-complete survey that captured data relevant to colleges and universities, both in managing their current operations and in deciding where to lead their programs in the future. The draft survey was converted to an electronic survey that was sent to members of APPA, NAEB, and CURC. The survey received 36 responses in one month, and this article is based on the data collected.

Harvard University recycling staff at work

Who Responded

The respondents from 22 states represent a broad cross section of the country as illustrated below.



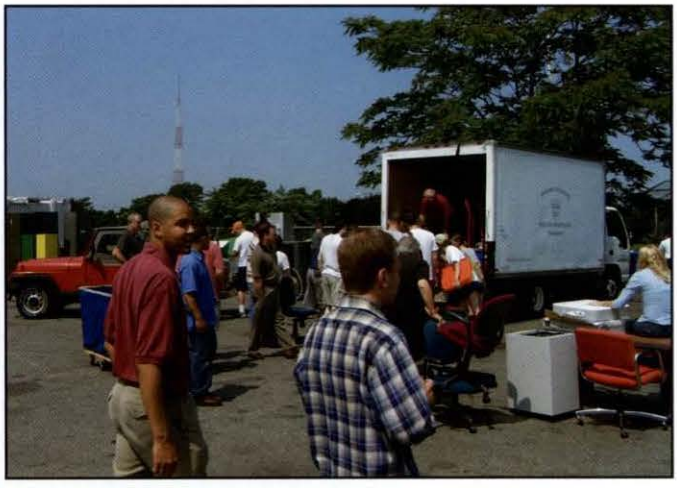
Arizona - 2	Nebraska - 1	Texas - 1
California - 1	New Hampshire - 2	Vermont - 3
Colorado - 2	New York - 3	Virginia - 1
Illinois - 1	Ohio - 2	Washington - 1
Indiana -1	Oklahoma - 1	Unknown - 1
Maine - 2	Oregon - 1	
Maryland - 2	Pennsylvania - 1	
Massachusetts - 3	Rhode Island - 1	
Michigan - 2	South Carolina - 1	

The Waste Hierarchy

The waste hierarchy reads something like this: reduce waste at the source, reuse where we can, and recycle as much possible before the remaining waste is landfilled or incinerated. What really has happened over the past decade or so is that we have focused extensively on recycling because it gives people instant gratification and the knowledge that they are helping save the environment. Colleges and universities reported that, in general, they are concentrating their resources on recycling first; reuse second; source reduction, buying recycled, and disposal third; and composting fourth.

Source Reduction

By far, campus source reduction is focused on double-sided copying to reduce the use of paper, and many campuses are requiring duplex copying features for all new copy machines. Other source reduction initiatives include expanded use of electronic documents, pay-for-printing systems in libraries and other public areas, bulk procurement of supplies (less packaging), jumbo roll toilet paper/towel rolls, and point-of-use napkin dispensing.



Surplus sale at Harvard University

Reuse

Campuses reported a wide range of reuse and donation programs. Many campuses now have "surplus stores" where they sell surplus office furniture, electronics, appliances, bicycles, and even cars and tractors. Some programs retain the revenues to build their programs, and others turn the funds over to their general fund. A number of creative schools are using these revenues to establish scholarship funds for students. Middlebury College in Vermont contracted with an outside vendor to manage 600 sets of furniture, a portion of which was sent to hurricane victims in Florida.

Many colleges and universities redistribute furniture and electronics internally between departments to extend the use of the equipment on campus. And more and more schools are collecting portions of the mountains of items discarded at the end of the school year including clothing, food, appliances, and school supplies, and reselling them to students in the fall or donating them to local charities.

Buying Recycled

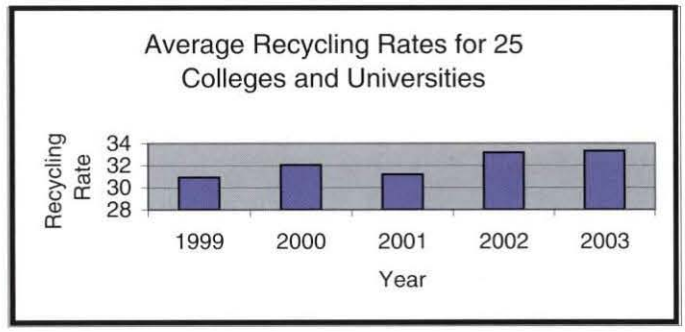
Colleges and universities buy tons of copy paper each year. Nearly every campus responding to the survey stated that they purchase recycled content copy paper with at least 30 percent post-consumer content. These efforts have been more successful recently due to the price competitiveness of recycled content copy paper compared to the price of virgin copy paper. In many instances, recycled content copy paper now costs the same as virgin. Campuses are also purchasing other recycled content office products including business cards, folders, pads, and letterhead paper.

Mixed paper at the University of Massachusetts Amherst

Many outdoor furnishings, including park benches, picnic tables, planters, and outdoor trash and recycling containers, are now being manufactured using recycled plastic lumber and are appearing on college and university campuses. Other initiatives include procurement of recycled content paper towels, toilet paper, motor oil, antifreeze, and office furniture.

Recycling

As one would expect, recycling rates varied dramatically from school to school, and within schools from year to year. Of the 26 schools reporting percent-based recycling rates, 14 reported an increase in recycling between 1999 and 2003, 7 reported a decrease, and 5 remained statistically the same. And within this group, 16 schools saw recycling rates fluctuate up and down (some rather dramatically) during the five-year period.

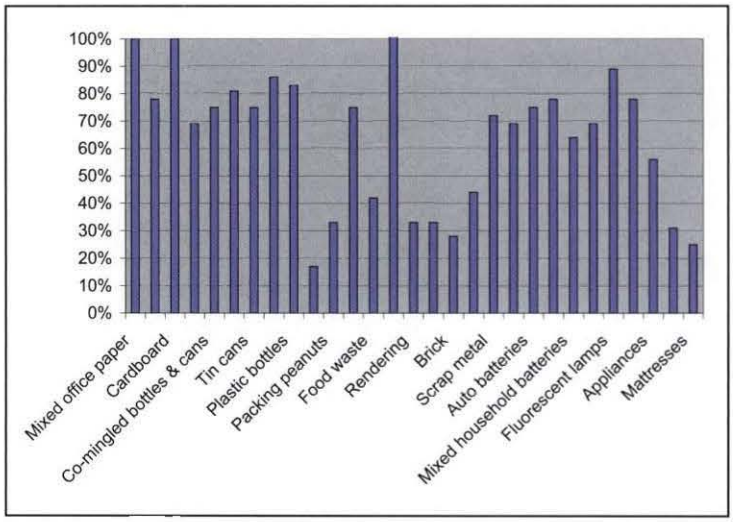


Approximately two-thirds of the respondents use a weight-based system to determine their recycling rates, one-third of the schools have no measuring system in place, and one campus uses a volume-based approach.

The following chart illustrates the average trend for the group from 1999 through 2003:

Materials Recycled

The following is an overview of materials recycled and the percentage of schools recycling them:



Materials Recycled and Percentage of Schools Recycling

Mixed office paper	100%	Asphalt	33%
Residential mixed paper	78%	Brick	28%
Cardboard	100%	Concrete	44%
Books	69%	Scrap metal	72%
Comingled bottles & cans	75%	Tires	69%
Glass containers	81%	Auto batteries	75%
Tin cans	75%	Oil	78%
Aluminum cans	86%	Mixed household batteries	64%
Plastic bottles	83%	Mixed electronics	69%
Shrink & stretch wrap	17%	Fluorescent lamps	89%
Packing peanuts	33%	Lamp ballasts	78%
Leaf and yard waste	75%	Appliances	56%
Food waste	42%	Propane tanks	31%
Animal bedding	22%	Mattresses	25%
Rendering	33%		

Many of the responses were predictable, including the high number of schools recycling mixed office paper, cardboard, and bottles and cans, and the low number of schools recycling difficult-to-recycle materials like shrink-and-stretch wrap and mattresses. Pleasant surprises included large numbers of campuses recycling fluorescent lamps, lamp ballasts, and mixed electronics. The markets for these materials have matured over the past five years, recycling valuable natural resources and keeping toxics like mercury and lead out of the waste stream.

Other Materials Recycled

Some schools recycled other materials through their programs including:

Coal bottom ash	Appliances
Coal flyash	Sporting goods
Printer cartridges	Paint
Toner cartridges	Antifreeze
Pallets, clean and dirty wood waste	Carpet
Greenhouse waste	Furniture
Magnetic media	Textiles and clothing

Composting

Seventy-five percent of campuses reported composting leaf and yard waste, and 42 percent recycled food waste. Food waste diversion is becoming more common, both because of its large fraction of the waste stream and its nutrient value in the composting process. The implementation of food waste recycling programs is largely controlled by the availability of nearby composting facilities. Because food waste must be hauled away every day or so, long distances between campuses and composting facilities can make food waste recycling programs unfeasible.

Disposal

High disposal rates help drive recycling programs, and disposal costs vary widely across the United States. In this survey, disposal costs ranged from $17 to $100.50 per ton, with the average rate being $52.27 per ton. Most colleges and universities (97%) reported that their waste is landfilled, 14 percent stated that their waste is incinerated, and some schools use a combination of both practices.

In its last bid, Harvard University required their trash collection company to use a CNG (compressed natural gas) fueled trash truck, which is much quieter than its diesel counterpart and produces less air emissions.

Harvard University's Mount Trashmore

Trends Over the Past Five Years

In assessing their progress over the past five years, 66 percent of the respondents said their programs had improved, 22 percent said they had declined, and 12 percent said their

programs had remained the same. During the five-year period, the focus on sustainability and sustainable operations grew at many schools. Some campuses became more focused on source reduction, buying recycled, water and energy use, and vehicle emissions, fostering a greener campus culture and promoting recycling programs.

Causes for declines in programs included transient student populations, volatile recyclables markets, cutbacks in funding for recycling programs, and apathy about environmental programs.

At some schools, administrators realized the potential improved public image and financial savings to be reaped from recycling and waste management programs. They hired staff and funded the purchase of recycling containers and educational materials. Others continued to focus on the short term and didn't support campus efforts to improve their environmental performance and reduce long-term costs.

Many budgets became tighter during the period, resulting in fewer education efforts, and decreased purchasing of recycled content products that can carry a cost premium.

Problems with staff, faculty, and students not recycling continued to exist. Ironically, a large number of campuses felt faculty were the most difficult segment of the campus population to convince that recycling is important. This was definitely not true at all campuses, but was cited as a more difficult issue than convincing students to recycle.

Food waste recycling at the University of Mass Amherst

Many schools instituted recycling mandates and proactive recycling education initiatives with varying results. Recycling in residence halls continued to be a huge challenge. Some campuses sponsored contests with rewards ranging from pizza parties to cash rewards for dorm staff to boost recycling rates. The results were mixed.

On many campuses, student groups were the environmental conscience of the institution and drove efforts to improve recycling and other environmental programs on campus. Donation programs that support charities became more widespread.

Many campuses found creative ways to compost on site or partner with local farms or other facilities to divert food waste. Some agricultural campuses composted animal bedding to better manage nutrient loads from manure, and other campuses used biodegradable plates, cups, and utensils at some of their events. The University of Massachusetts at Amherst composted leaf and yard waste and animal bedding on campus, and sent all of its pre- and post-consumer food waste to an off-campus facility for composting. Harvard University installed Somat food pulpers in all renovated dining halls to keep food waste out of the sewer system and reduce water consumption. Space constraints and concerns about

Glass Bottles

odors and vermin continued to keep composting from coming to some campuses.

Additional packaging and more newfangled, less durable products created more waste for campuses to manage.

Markets for Recyclables

Half of the schools affirmed markets for recyclables had improved, especially for mixed office paper, newspaper, and cardboard. The balance of the campuses stated that markets in their regions fluctuated or were depressed.

Some schools have improved their ability to find end markets for their recyclables by working with regional transfer stations. And some are creating new end market opportunities by using their mixed glass cullet as an aggregate substitute in "glassphalt" paving, and greenwaste and woodwaste in biomass energy facilities.

Revenue

Three-fourths of the programs said they received revenue for their recyclable materials. Materials generating revenue included paper, cardboard, aluminum, scrap metal, plastics (especially 1&2), and inkjet and toner cartridges.

Recycle Mania

Recycle Mania is a competition between leading university recycling programs in the United States. Schools compete to determine which can collect the largest amount of recyclables from residence halls, on-campus apartments, and dining halls during a ten-week period. Measurements are reported on a weekly basis in pounds recycled per student living on cam-

pus. Recycle Mania provides students with a fun, proactive activity in waste reduction, and a Recycle Mania trophy is presented to the winner.

Although 72 percent of the survey respondents stated they had heard of Recycle Mania, only 23 percent said they participated in the program. Many schools would like to participate in this worthwhile program, but do not have the staff to collect the required data.

Barriers

The most glaring barrier cited in establishing recycling programs was the lack of support from many campus administrations. A large number of campus administrators still view recycling as a luxury, not a necessity.

In the financial arena, artificially low trash disposal fees and tight campus budgets have hampered recycling efforts. Challenging local and regional markets for recyclables have caused revenues to ebb and flow, making it difficult to develop long-term staffing and financial plans. Buy recycled programs are difficult to enforce on many campuses due to decentralized purchasing systems.

Operationally, the inability to weigh materials and poor facilities for sorting and storing recycled materials create inefficiencies and make it difficult to track data. The separation of the recycling operations from trash collection and custodial functions and the inconsistency of custodial support hamper efforts to create a coordinated, efficient system.

At some schools, administrators feel recycling containers are unattractive, and as a result limit the numbers and locations of containers placed on campus. Aesthetic and fire egress issues also constrain placement of recycling containers.

From a big picture point of view, federal and state governments have failed to create a framework to support recycling initiatives, and funding for recycling programs has vanished in countless areas. Recycling has lost some of its luster, resulting in a general apathy about recycling in many areas. And people are moving too fast these days to worry about recycling and other environmental issues.

Recycling drop-off area, Edinburgh, Scotland

Recycling at the University of Edinburgh, Scotland

Karen Bowman, David Somervell, and other sustainability staff at the University of Edinburgh in Scotland were gracious hosts and spoke about recycling and sustainability in Scotland and the United Kingdom. University of Edinburgh recycling rates over the past five years have increased from 10 to 18 percent, and they have a clear target from the university's Sustainability & Environmental Advisory Group to increase recycling to 30 percent by 2006-07. Participation in the program continues to rise and is promoted by a People and Planet student campaign (www.edinburghpandp.org).

Mixed office paper, cardboard, books, tin and aluminum cans, leaf and yard waste, fluorescent lamps, appliances, and mobile phones are recycled. The campus uses a combination of volume and weight based systems to measure trash and recycling. They do not receive any revenue for their recyclables, but they are not charged for recycling. Their landfill tip fees are $150 per ton. Markets for recyclables are poor but have been improving marginally. Much work needs to be done in the UK in this area.

Electronics and office furniture are donated to local charities. As part of the Extended Producer Responsibility initiative, computer suppliers are required to take back all their packaging. The university's buy recycled program focuses mainly on Fairtrade issues, especially beverage and confectionery purchases.

Creative public education - University of Massachusetts Amherst recycling statistics on display

The Future

We hope that by educating administrators about the societal, public image, and cost avoidance benefits of recycling initiatives, many recycling programs will become institutionalized in the future and move from being run by student volunteer groups to being managed by paid college and university staff.

Many schools will focus on improving recycling rates for materials currently recycled, especially mixed electronics (personal computers, monitors, televisions, cell phones, personal digital assistants), bottles and cans (especially plastic containers), and universal wastes (batteries, mercury containing products including thermostats, switches, and fluorescent lamps). Other campuses will be searching for markets for ad-

ditional materials not currently recycled including propane cylinders, mattresses, and food waste. The recycling of food waste appears to be the major target, and many schools plan to use the compost end product on campus to close the loop.

The use of biomass energy—energy generated from organic matter—has the potential to reduce our greenhouse gas emissions and will probably become a more viable end market for campus organic wastes over the coming years.

Single stream recycling programs, where mixed paper and bottles and cans are collected and recycled together, will probably become more common. Single stream recycling programs are causing some controversy across the country due to concerns about contaminating paper with glass and plastic. The benefits of the program are reduced collection costs and environmental impacts, and increased convenience for faculty, staff, and students generating the recyclables. Maybe in time improved processing technologies will overcome the contamination issues.

Many colleges and universities will be searching for ways to better educate and motivate faculty, staff, and students, and to institute recycling programs at new buildings and public events including football tailgating areas and concerts.

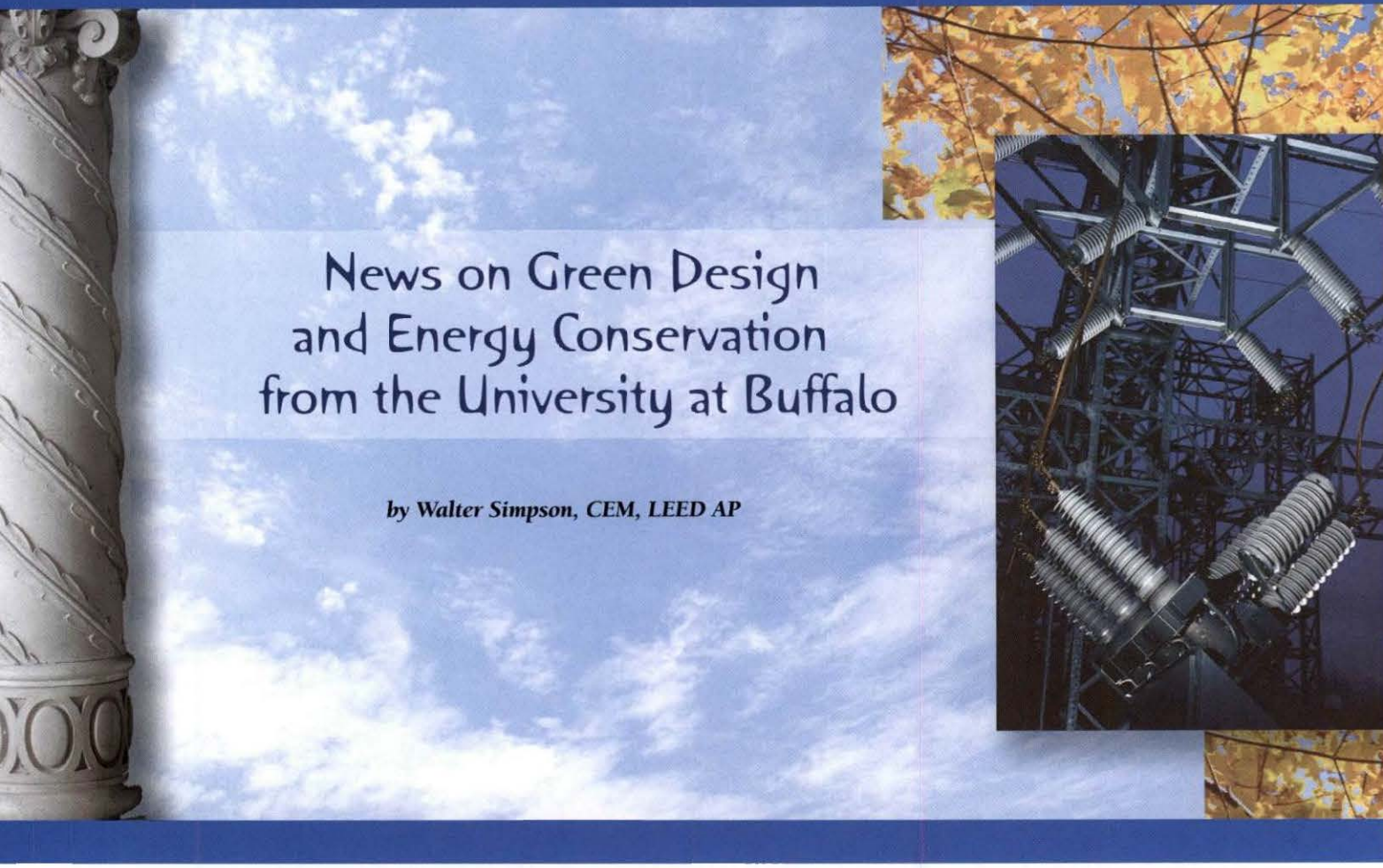
Participation in Recycle Mania is expected to increase. Campuses will use this competition to increase student awareness about the importance of recycling and other issues including waste reduction, water and energy conservation, and greenhouse gas emissions.

Recyled plastic benches and planter, University of Massachusetts Amherst

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) established national standards for the security and privacy of health data. As a result, many organizations, including campuses with medical facilities, are shredding greater quantities of confidential documents than ever before. This fee-based service will result in increased costs and in some cases decreased revenues for campus recycling programs.

Sustainability initiatives will continue to grow and make environmental issues including recycling more relevant in our daily lives by highlighting more and more opportunities to save energy and reduce waste. One national program, Leadership in Energy and Environmental Design (LEED), promotes the construction of high performance, sustainable buildings and will advance the recycling of construction materials including asphalt, brick, concrete, wood, sheetrock, and scrap metal. It will also foster the procurement of building materials and site amenities made with recycled materials, and enhance other buy recycled programs focused on recycled content copy paper, paper towels, toilet paper, motor oil, antifreeze, office furniture, carpet, and Energy Star products.

Many people hope that markets will become somewhat more stable and viable over the coming years due to increased demand from China and domestic mills. Cooperative marketing efforts between large and small colleges and universities will help smaller institutions access markets previously inaccessible to them due to their location and low generation rates. Networking opportunities to share lessons learned through groups like APPA, NAEB, and CURC will help campuses walk into the future and build healthy, dynamic college and university recycling programs.



News on Green Design and Energy Conservation from the University at Buffalo

by Walter Simpson, CEM, LEED AP

The University at Buffalo, State University of New York (UB), continues to take steps to strengthen its campus energy and environmental stewardship programs. Recent developments include the completion of the university's green building guidelines and initiation of a new energy conservation awareness program.

Two years in the making, the University at Buffalo has just published its *UB High Performance Building Guidelines*. This 150-page manual is intended to advance UB's commitment to the principles of green design. Thus far, UB has one LEED (Leadership in Energy and Environmental Design) certified building—a community center in a new campus apartment complex. However, a new UB bioinformatics science building may qualify for LEED silver.

New York Governor's Executive Order 111 requires state agencies, including all 60 State University of New York (SUNY) campuses, to follow the principles of green design in all new construction. While the Executive Order does not require state agencies to apply for and obtain LEED certification as granted by the U.S. Green Building Council, the Order does require these agencies to satisfy themselves and the New York State Energy Research and Development Authority (NYSERDA) that designs for new construction and major renovation comply with all LEED prerequisites and achieve enough LEED points to meet the LEED bronze rating threshold. UB facilities managers would eventually like to see a LEED gold or platinum building on at least one of UB's two campuses. The new UB guidelines provide strategies for getting there.

The *UB High Performance Building Guidelines* is a comprehensive document that addresses both the green design process in a college and university setting and the technical strategies necessary to apply the principles of green design to new campus construction and renovation projects. The manual is organized in a way to encourage genuine integrative, holistic sustainable design and not just what might be called "the LEED checklist approach" (where green design is a secondary priority or an afterthought, and a minimal effort is made to collect just enough LEED points to certify a building).

The guidelines are the result of a collaborative effort between UB, the NY State University Construction Fund, the Dormitory Authority of the State of New York, and expert consultants Hillary Brown (New Civic Works) and Steven Campbell (Phoenix Design). Both consultants were instrumental in preparing New York City's High Performance Building Guidelines. The UB project was co-funded by NYSERDA.

Walter Simpson is energy officer at the University at Buffalo, State University of New York, and can be reached at wsimpson@facilities.buffalo.edu. He is a three-time recipient of APPA's Rex Dillow Award for Outstanding Article.

UB's new energy conservation awareness program is called "You Have the Power." Its inspiration came when the university community proved it did have the power to do some serious operational energy conservation when called upon to do so during an emergency load reduction incident.

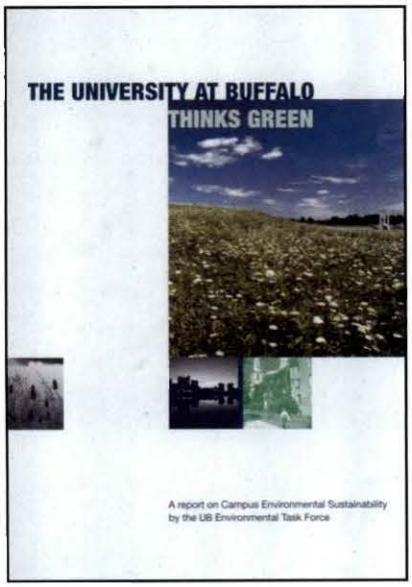
One hot August day in 2003, a couple of days after a big blackout in the Northeast U.S. and eastern Canada, the University at Buffalo was quick to respond to an emergency request from the regional grid to cut back its electricity use. Facilities staff took steps across UB's two campuses to turn off equipment and lights that were not absolutely necessary. Those steps produced documented savings of over $11,000 in energy costs in a single day—without adversely impacting the academic and research missions of the university or reducing productivity.

That got university administrators and facilities managers thinking. Light bulbs started to go on—or rather off!—as we realized that some fraction of those savings could be achieved on a daily ongoing basis if the entire university community was invited and empowered to join the effort.

To accomplish this, the "You Have the Power" energy conservation awareness campaign was created by the UB Green Office, the environmental advocacy office within UB's University Facilities department. Symbolized by a simple light switch turned to the OFF position, the campaign provides numerous energy saving tips so members of the university community can easily "turn it off."

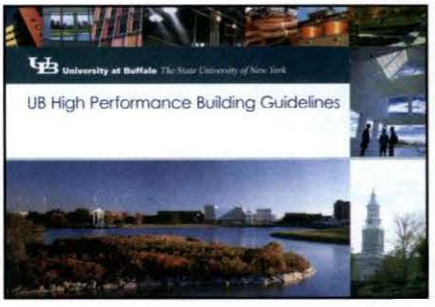
Using posters, lobby signs that show each building's annual energy use, a website (www.buffalo.edu/youhavethepower), and brochures—all with the light switch motif—the campaign is aimed at motivating faculty, staff, and students to save energy at UB. Suggestions in campaign materials run the gamut from enabling "sleep modes" on computers to eliminating decorative table lamps, buying the most energy-efficient equipment, and running laboratory fume hoods efficiently.

This year rising natural gas and electricity prices are adversely impacting UB's annual energy bills, which already approach $20 million annually. In that context, UB facilities staff estimate that an energy awareness program like "You Have the Power" could save $500,000 to $1 million a year



and go a long way to averting a utilities' budget shortfall.

The "You Have the Power" website also features a section entitled "Green Partners," which describes projects voluntarily undertaken by schools and departments on the UB campus to reduce UB's environmental footprint. These range from using 100 percent post-consumer content recycled paper to exploring the use of energy-efficient vending machines on campus. The website also has special sections on energy facts— from local to global—and on home energy conservation.



The University at Buffalo has had a longstanding commitment to energy conservation. Projects completed to date are estimated to be achieving in excess of $9 million in annual savings.

In addition to conservation and efficiency, UB is shifting to cleaner forms of energy. In 2003, UB became the largest purchaser of wind energy in New York State. During 2004, UB purchased 12 million kilowatt hours of wind generated electricity from the Fenner Wind Farm near Syracuse, New York. UB also has plans for on-site renewable energy generation. A 100-kilowatt photovoltaic array is scheduled to be installed on one of UB's classroom buildings in the fall of 2005.

Available UB Resources

A variety of resources and more information about UB's energy and green campus programs are available on the UB Green website, wings.buffalo.edu/ub-green. Information packets are also available from the UB Green Office, ubgreen@facilities.buffalo.edu, 716-829-3535.

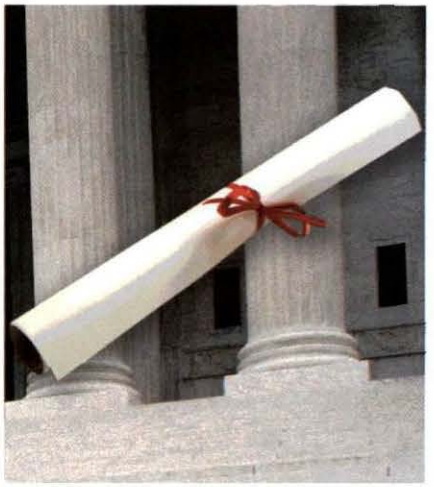
Copies of the *UB High Performance Building Guidelines* are being distributed to all 60 SUNY campuses. UB's green team hopes that the UB Guidelines will be of assistance to any other campus or agency interested in designing and building green buildings. The UB Guidelines are available online on the UB Green website. Hardcopies with CD ROMs are also available for $40 from the UB Green Office.

Sustainability and Higher Education

by James Sebesta

Momentum continues to build as more notice is paid to the benefits for higher education when attention is paid to issues such as sustainability, life cycle costs, environmental stewardship, and asset preservation. Balancing these issues with a continued volatility in energy supply, reliability and costs, and the growing demand for a diminishing pool of financial resources (which will not change any time soon) add to the complexity of institutional management. Within these forces and influences, it is important that long-term strategies, direction, and focus be the guiding factor for a facility management decision-making structure within the higher education community.

LEED® Green Building Rating (LEED®-NC) system is becoming both a nationally and internationally recognized standard measure of sustainability for new capital projects. Sustainability, for the sake of this article, can be defined as a process that reduces the long-term impact on natural resources and the environment in a cost-effective and socially acceptable manner. However, for most colleges and universities, there is already a significant facility and building base which also needs to be considered to truly move toward a sustainable and cost-effective campus. In order to accomplish this, the institution's administration should look toward a new LEED® rating tool which has been released for existing buildings (LEED®-EB) and focuses on the sustainability of the operations and maintenance of an existing facility. This tool, the LEED®-EB rating tool, evaluates the same five areas as LEED®-NC, that is 1) site, 2) water efficiency, 3) energy and atmosphere, 4) materials and resources, and 5) indoor environmental quality. Facilities departments can use this rating tool to report to the sustainable committees on their progress and identify areas that need additional funding to correct deficiencies.



The LEED®-EB rating system has 14 prerequisites and 85 possible points to achieve various levels of certification. The Energy and Atmosphere (EA) section dominates in LEED®-EB with 28 percent of the possible points and three prerequisites. The first prerequisite of the EA section is existing building commissioning, more commonly referred to as retro-commissioning, which is a systematic process of verifying and documenting that the fundamental building systems are performing as intended to meet current needs and sustainability requirements. This process will identify deficiencies in system operations, provide a documented building operation plan, and identify operational savings potential.

The next prerequisite demonstrates that the building has achieved a minimum level of energy efficiency (Energy Star Rating of 60). These two prerequisites usually identify savings potential which will help a facilities department obtain the necessary funding to upgrade the building systems to meet the sustainable goals of the university. After meeting the prerequisites, additional effort is needed to obtain the points that lead to certification. Improving the Energy Star rating can result in up to an additional 10 points (one point for each four-point rating improvement). Enhanced monitoring efforts can result in another three points. Enhanced monitoring consists of basic measuring, assessing, improving, and measuring activities to maintain an efficient system. Studies have shown that implementing a retro-commissioning, enhanced monitoring and facility optimization work-order system can result in energy savings of up to 40 percent annually over non-monitored buildings.

The sustainable sites section targets issues that impact the community such as stormwater management, light pollution, and alternative transportation. This section is about being a good steward and creating minimal impact on the community infrastructure. The water efficiency section focuses on methods and opportunities to reduce water use through native landscaping, minimal irrigation, and use of water efficient plumbing fixtures. The materials and resources section requires working with various campus departments to establish an environmentally preferred purchasing

***Jim Sebesta is president and CEO of Sebesta Blomberg & Associates, Roseville, Minnesota and a Business Partner of APPA. He can be reached at sebesta.jj@sebesta.com. This is his first article for* Facilities Manager.**

policy for paper, janitorial supplies, furniture, and other items. This section also establishes recycling targets that can be monitored and improved over time.

The fifth section mentioned above is the Indoor Environmental Quality Section which is the other major section of LEED®-EB with 22 points available. Indoor pollution sources are first minimized as best possible and then managed to have the least impact on occupants. Thermal comfort and daylighting are encouraged and monitored for points. Incorporating green housekeeping techniques also contribute significant points to the overall rating.

Sustainability, for the sake of this article, can be defined as a process that reduces the long-term impact on natural resources and the environment in a cost-effective and socially acceptable manner.

While energy is a cornerstone of a sustainable operations program, the entire program needs to be approached in a holistic and realistic manner throughout a campus. The LEED®-EB rating system and the ideals and programs outlined above provide an integrated approach to performance measurement and can guide decisions that lead to economically sound sustainable solutions. Sebesta Blomberg has elected to participate in the LEED® -EB pilot program for certification of its corporate headquarters, and is already seeing the benefits from the audit and program development which will pay dividends in terms of future impact on the environment and the community as well as reducing our cost of business.

Higher educational facilities are poised to be a leader in their communities through the development and implementation of comprehensive sustainable operations and maintenance programs. Whether certification is sought, or the ideals and processes of LEED® is only used as guidance, is a decision that must be made by each institution. However, the degree to which each institution endorses a belief in sustainability will have a dramatic impact on the regional and national environment in the long term.

The Bookshelf

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

Safety and security are issues that affect facilities officers more and more these days yet it seems as though we can never have enough reference materials. This month we look at the broad issue of security and specifically at hazardous materials. I appreciate the contribution of John DeLaHunt, from Colorado College, who shares with us his expertise in chemistry and hazardous materials in the second book review. Don't think these are the only books on safety and security; there will be more reviews in the coming months.

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Jane's Property & Facility Managers' Workplace Security Handbook, United Kingdom: Jane's Information Group (www.janes.com), 2004. 368 pages, spiral bound. Available through www.bomi-edu.org.

The work of facility officers never seems to be done. They have to be concerned about employees, training, building security, disaster planning, communication, and now terrorist threats. As we all learn more about our facilities and how to keep them economically operational, we also learn that we don't know enough about keeping them secure. So much has changed in the last three years and yet so much is still the same.

Most importantly, the book provides examples of workplace security events that can easily be overlooked by property owners and managers because "it won't happen here."

Jane's Property & Facility Managers' Workplace Security Handbook is intended to be a helpful reference for a wide variety of security issues that face property owners and managers. What are the external and internal threats? How can they be addressed? That's the easy description. The closing keynote speaker at APPA's 2004 Educational Facilities Leadership Forum, Darin Goodwiler with the Federal Protection Services Division of the Homeland Security Office, outlined some of the issues the federal government faces and suggested that as higher education facility officers we have some of the same issues.

This handbook is designed to be handy; it's small, almost pocket sized (although perhaps a little fat for most pockets), with tabs for the major subject areas. While it would be nice to think that the book can be used as a quick reference in the event of a workplace security event, the authors make it clear that planning first for an event is critical. Chapters provide some checklists and samples of what an organization's manual should include. These items are helpful to get through the writer's block that often accompanies planning for hypothetical events. Most importantly, the book provides examples of workplace security events that can easily be overlooked by property owners and managers because "it won't happen here."

For those who spent the time in 1999 to prepare for the "millennium bug" the planning effort generally evolved into other emergency plans. These plans were extremely helpful on 9/11, not because there was a similar foreseen event, but because in these plans, there may have been some procedures to address decisions to close the campus, erect a security perimeter, or organize counseling for employees. Those who didn't have an emergency plan in 2001 may have since developed one. For these folks, this handbook should be useful to evaluate an existing campus emergency manual and make improvements or additions. For those who are still thinking about developing emergency plans, this book should provide sufficient information to get started on your own plan.

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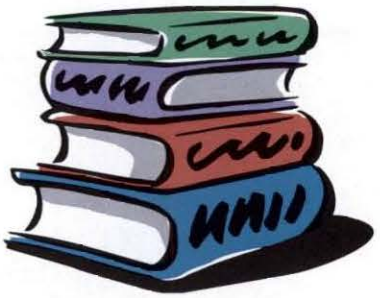
Proctor and Hughes' Chemical Hazards of the Workplace, 5th Edition, Nick H. Proctor and James P. Hughes, edited by Gloria J. Hathaway and Nick H. Proctor. Hoboken, New Jersey: Wiley, 2004 (www.wiley.com), 785 pages, cloth.

Ted Weidner is assistant vice chancellor of facilities management & planning, University of Nebraska–Lincoln, Lincoln, Nebraska and president of Facilities Asset consulting, Amherst, Massachusetts. He can be reached at tweidner2@unlnotes.unl.edu.

Like most chemical hazard references, *Chemical Hazards of the Workplace* is substantial and incomplete. This is not a fault. No chemical hazard reference can possibly cover all the detailed descriptions of chemicals in every level of hazard. As a result, health and safety managers looking for such a work had better start getting used to the idea of keeping several reference books on their shelves; Chemical Hazards should probably be one of them.



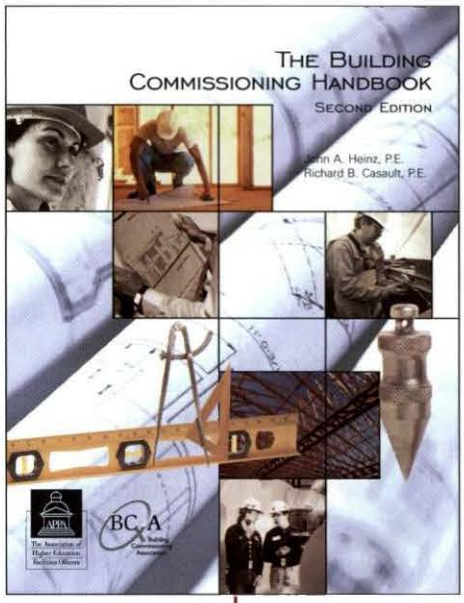
Chemical Hazards devotes a few (a very few) pages to basic elements of toxicology. The brief introduction to toxicology is good background information for non-specialists looking for a quick rendering of the topic. The book quickly moves into the toxicological hazards of a long list of industrial and other common chemicals. A chemical name index and a CAS number index support the substantial bulk of information. The reference omits basic information about chemical hazards, such as physical data, fire safety data, reactivity, chemical compatibilities, and warning properties. It does, however, provide substantial detail on toxicology, carcinogenicity, mutagenicity, and teratogenicity and the effects of exposure; the content within each entry in the book is substantial and well documented.

This is clearly a work designed to assist industrial hygienists with their projects, as opposed to lay people or those with more general concerns about hazardous chemicals.

This is clearly a work designed to assist industrial hygienists with their projects, as opposed to lay people or those with more general concerns about hazardous chemicals. Since the toxicology information is so substantial, users of this reference may rely on this book to be the "health" tile in a comprehensive chemical health and safety mosaic.

Reviewed by
John DeLaHunt
Assistant Director for Environmental Health & Safety Services
The Colorado College
Colorado Springs, Colorado

The Building Commissioning Handbook Second Edition



This popular handbook has been revised by the original authors to include the most up-to-date information on all aspects of building commissioning. This is your guide to:

- Staying on Budget
- Improving the Quality of your Buildings
- Meeting your Schedule
- Increasing Energy Efficiency

How can this book help you in your commissioning program?

- Owners—in developing or improving commissioning programs for new and existing facilities.
- Design Professionals—in reinforcing that your work fully meets the owner's project requirements.
- Contractors—in improving the quality and functionality of your work and in becoming effective partners in the commissioning program.

Building Commissioning Handbook, Second Edition contains:

- Chapters outlining the commissioning process from pre-design to occupancy and on the economics of commissioning and retrocommissioning.
- An actual case study to test your skills.
- Extensive Appendices with information on
  - Commissioning documents
  - List of commissioning items
  - Construction, mechanical, electrical guidelines

The authors share with the readers the lessons they have learned in over 40 years in the "owner" role as facilities managers and engineers at one of the nation's leading universities, where they have implemented a successful commissioning program. Through their subsequent experience as commissioning service providers, leaders, and trainers, they convey state-of-the-art recommendations to help you get the greatest benefit from your commissioning investment. By applying the commissioning process described in the *Handbook*, the odds of completing your projects on budget and on schedule greatly improve. Building commissioning, properly applied, is the owner's optimum quality assurance program.

APPA
The Association of Higher Education Facilities Officers

BCxA Building Commissioning Association

This publication is jointly published by APPA and The Building Commissioning Association.

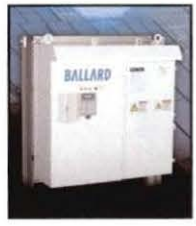
To order this publication, visit www.appa.org or call 703-684-1446. Price is $65 members/ $95 nonmembers.

New Products

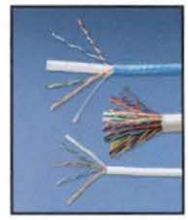
New Products listings are provided by the manufacturers and suppliers and are selected by the editors for variety and innovation. For more information or to submit a New Products listing, contact Gerry Van Treeck, Achieve Communications, 3221 Prestwick Lane, Northbrook, IL 60062; phone 847-562-8633; e-mail gvtgvt@earthlink.com.

Shaw Tek introduces "In Line," a sophisticated collection of complementary carpet styles designed for the higher education markets. The collection is comprised of six products in varying scales, each available in nine colors. "In Line" offers ultimate pattern and color flexibility. Created using advanced tufting technology and random color thread-up capabilities, "In Line" creates a large-scale illusion of pattern and undulating color changes across the width of the products. For additional information about Shaw Tek "In-Line," visit www.shawinc.com.

HydroTherm announces the KN-10, a commercial gas-fired boiler featuring Tru-Flow™ technology. Tru-flow is a trade name for a self-adaptive design that adjusts air and fuel under many conditions and "thinks for itself" to maximize performance and boiler safety. The new KN-10 boiler operates without producing emissions even with the flue or air-inlet significantly blocked. Through Tru-Flow technology, the KN-10 boiler is designed to react to changes in air or flue flow—from any cause—by reducing the input while maintaining high combustion quality and constant CO_2 with reduced CO. Request more information from HydroTherm at 413-564-5515.



Ballard Power Systems offers its 30kW Ecostar™ power converter specifically designed for photovoltaic (PV) applications. The 30kW grid-tie utility interactive power converter combines inverter and transformer efficiency with ease of installation. Based on state-of-the-art technology, Ballard's 30kW product offers improved reliability and up-time while reducing the payback period for the product investment. The 30kW product joins Ballard's recently announced 75kW grid-tie inverter. With peak inverter efficiency of 97 percent, transformer efficiency of 97.5 percent, and standby tare losses of 25 watts, the 30kW Ecostar™ power converter is one of the most efficient commercial inverters available in North America. For more information, visit to Ballard Power Systems at www.ballard.com.



PANDUIT introduces the TX Copper Cabling System, a reliable, high-performance end-to-end solution consisting of connectors, patch panels, patch cords, and now, cable. The TX Copper Cabling System now includes a full line of high performance Category 5e (TX5500), Category 6 (TX6000), and Enhanced Category 6 (TX6500) copper cabling products for deploying your mission critical applications. This integrated system is backed by a PANDUIT Certification Plus 25-year system warranty. For additional details, call PANDUIT at 800-777-3300.

Active Power announces a GenSTART Retrofit Program aimed at enhancing reliability in existing engine generator installations. The patented GenSTART System eliminates the number one reason generator sets fail to start—dead or weak lead-acid starter batteries. The program features the battery-free GenSTART System which increases starting reliability for up to 8MW of multiple standby engine generators and individual GenSTART Modules that can supply 1725 cold-cranking amps to generator set starter motors. Both products supply engine generators with assured starting power when it is most critical—at start-up. Active Power now offers these products to end-users with existing generator installations as well as users of uninterruptible power supplies (UPS) that include Active Power's battery-free CleanSource® UPS systems. For greater details, call Active Power at 512-836-6464.

Universal Lighting Technologies introduces new literature for the Multi-5™ Uni-Pak™ Ballast & Lamp Replacement Kit. The Multi-5™ Uni-Pak™ offers many advanced benefits not offered by any other HID replacement kit. The kit includes five taps in one: 120, 208, 240, 277, and 480 volts. It also packages the correct ballast and lamp together to ensure system compatibility. A prewired capacitor (plus igniter, if needed) is included to save installation time and reduce wiring errors. All capacitors offer trip fault protection. Leads are color-coded to reduce the risk of incorrect wiring inside the fixture. For full details, call Universal Lighting Technologies at 615-316-5100.

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APPA Events - 2005

June 19-23—*Leadership Academy.* Las Vegas, NV.

Aug 4-6—*Educational Facilities Leadership Forum.* Orlando, FL.

Sep 18-22—*Institute for Facilities Management.* Norfolk, VA.

APPA Regional Meetings - 2005

Sep 11-14—*RMA Regional Meeting.* Vail, CO. Contact Tommy Moss, 970-491-1060; e-mail tmoss@users.fm.colostate.edu.

Sep 16-21—*CAPPA Regional Meeting.* Little Rock, AR. Contact David Millay, 501-569-8897; e-mail dlmillay@ualr.edu.

Oct 1-5—*PCAPPA Regional Meeting.* Tacoma, WA. Contact Craig Benjamin, 253-879-2820; e-mail cbenjamin@ups.edu.

Oct 2-5—*ERAPPA Regional Meeting.* Atlantic City, NJ. Contact Kevin Herron, 201-569-9500; e-mail herronk@d-e.org.

Oct 8-11—*SRAPPA Regional Meeting.* Memphis, TN. Contact Jim Hellums, 901-678-2077; e-mail jhellums@memphis.edu.

Oct 9-13—*MAPPA Regional Meeting.* St. Paul, MN. Contact Tom Dale, 651-962-6530; e-mail tldale@stthomas.edu.

Other Events

Feb 4—*Deadline for application for the 2005 Latrobe Fellowship.* Contact Pauline J. Porter, 202-626-7521, pporter@aia.org.

Feb 24-28—*Supervisor's Toolkit: Nuts and Bolts of Facilities Supervision.* CAPPA Technology Conference, San Antonio, TX. Contact Pat Apel apel@maryville.edu.

Mar 15-17—*Maintenance Solutions Expo.* Baltimore, MD. Contact Tim Rowe, 414-228-7701, tim.rowe@tradepress.com. Event website www.nfmt.com.

Mar 15-17—*National Facilities Management and Technology Conference Exposition.* Baltimore, MD. Contact Tim Rowe, 414-228-7701, tim.rowe@tradepress.com. Event website www.nfmt.com.

Apr 11-14—*Supervisor's Toolkit: Nuts and Bolts of Facilities Supervision.* Metropolitan Community Colleges, Kansas City, MO. Contact susi.mickey@kcmetro.edu.

Apr 24-27—*ESS Expo. 05*—Phoenix, AZ. Contact Robin Thompson, 800-289-6116, ext. 5514, robin_thompson@environ.com. Event website http://www.essexpo.com.

Jun 1-3—*Child Welfare League of America: Juvenile Justice Symposium 2005.* Miami, FL. Contact Christy Sharp, 202-942-0329, csharp@cwla.org. Event website www.cwla.org.

Sep 11-13—*CMAA's 2005 National Conference & Trade Show.* Huntington Beach, CA. Contact 703-356-2662. Event website www.cmaanet.org.

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