

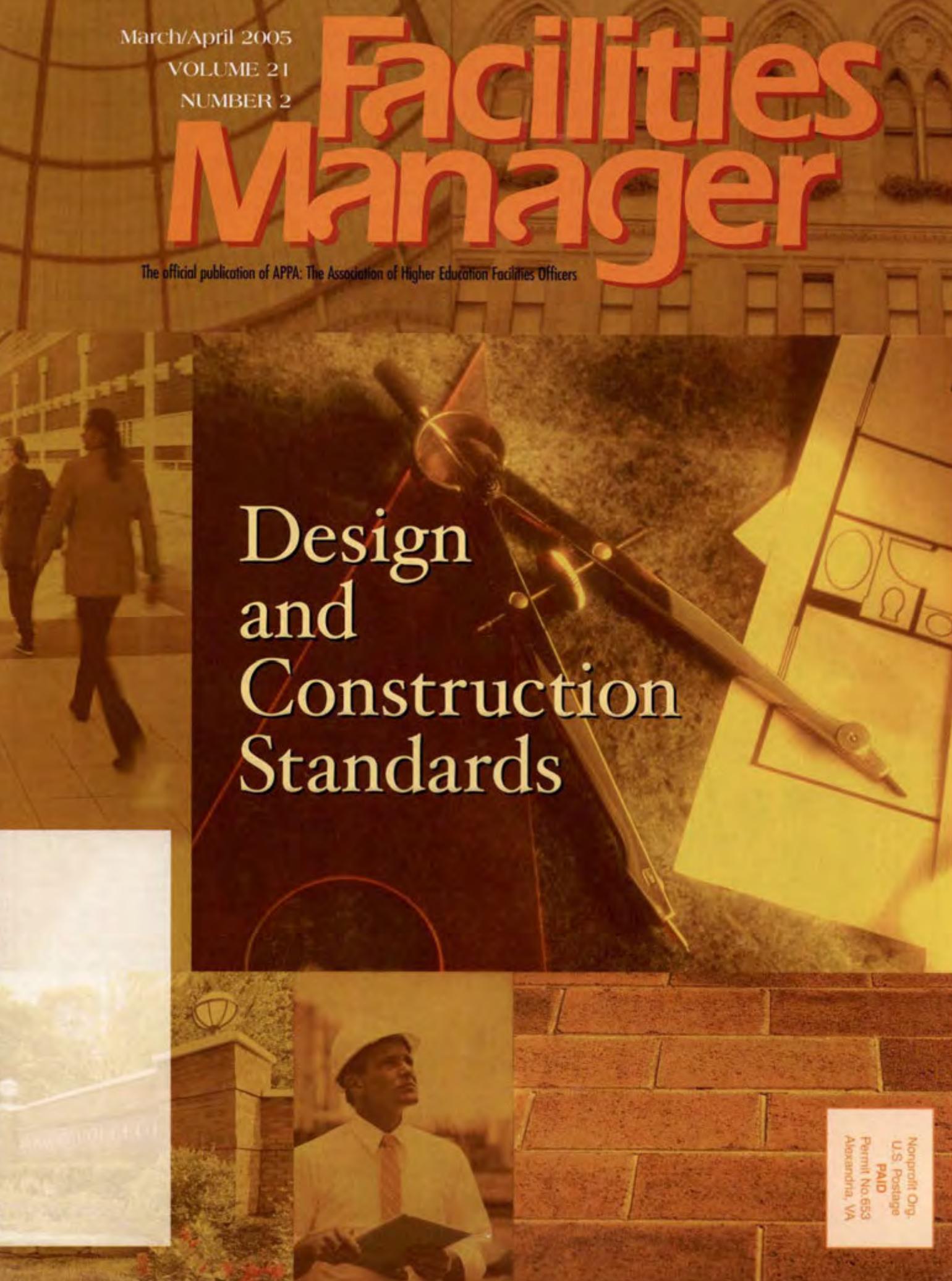
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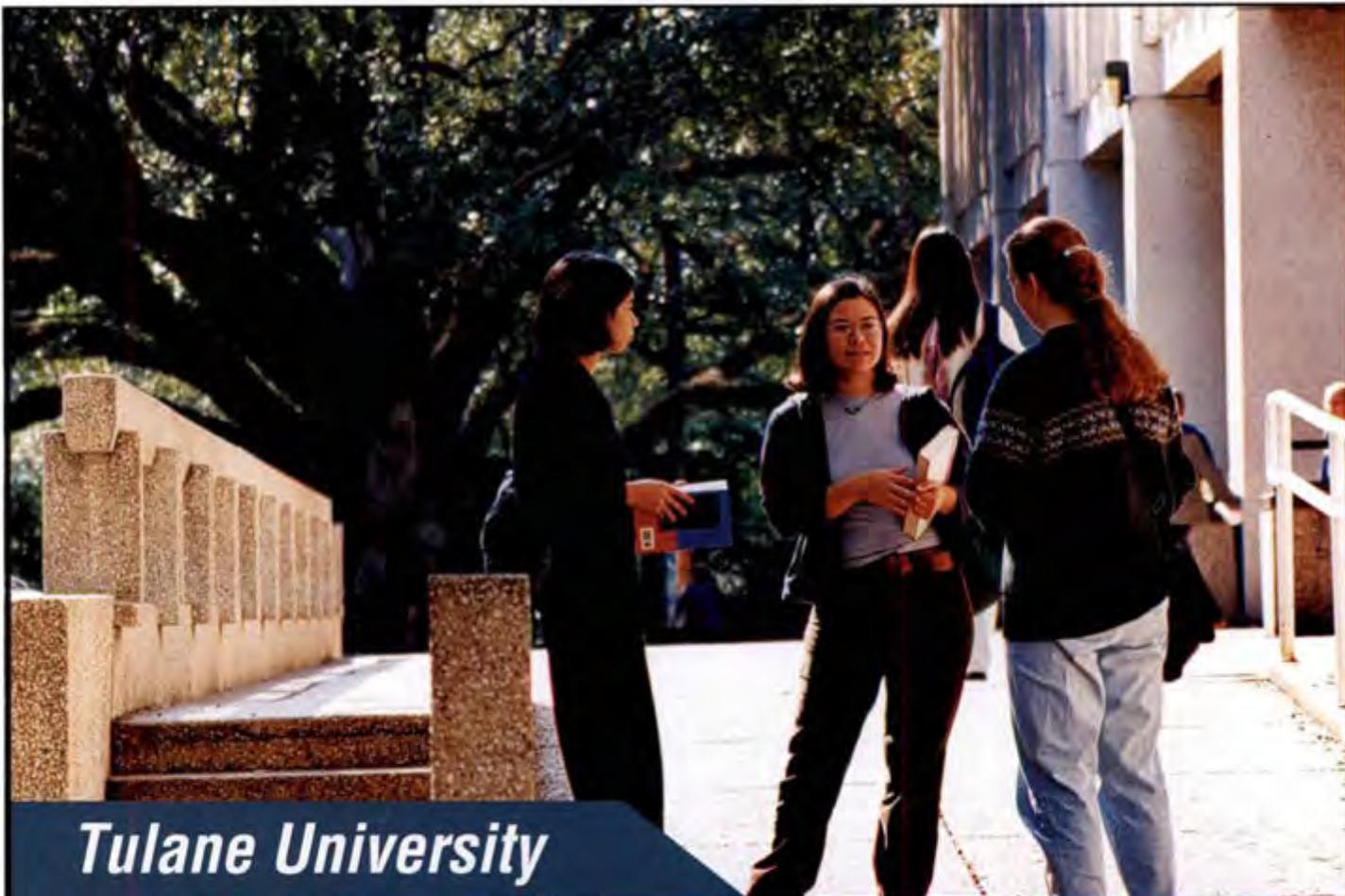
Facilities Manager

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



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THIS ISSUE'S TOPIC:

DESIGN AND CONSTRUCTION STANDARDS

FEATURE ARTICLES

23 Offices on Campus

by Ira Fink, Ph.D., FAIA

38 The Non-Architect's Guide to the Design Process

by Phillip S. Waite

44 Master Format 2004 Edition: Improving Construction Project Delivery and Facility Management

by Dan R. Merriman, APR

48 Focusing on Performance Indicators

by James R. Barnett, Ed.D.

Facilities Manager

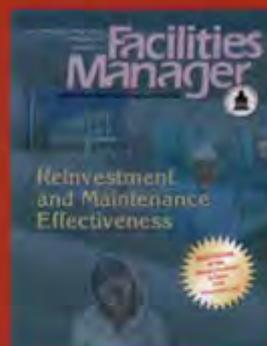
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Volume 21 Number 2

March/April 2005

COLUMNS

From the Editor	4
APPA News	6
<i>by Betsy Colgan</i>	
Executive Summary	10
<i>Facilities: A Strategic Investment</i> <i>by E. Lander Medlin</i>	
Code Talkers	12
<i>News Flash on Flash Protection</i> <i>by Michael A. Anthony, P.E.</i>	
Membership Matters	16
<i>Historically Black Colleges and Universities: Who Are They?</i> <i>by Sam L. Polk Sr., Ph.D.</i>	
Facility Asset Management	50
<i>The Link between Construction and Maintenance</i> <i>by Matt Adams, P.E. and Mark Wantage, P.E.</i>	
The Bookshelf	53
<i>Book Review Editor: Theodore J. Weidner, Ph.D., P.E., AIA</i> <i>This issue's reviews by John Casey, Ph.D., P.E.</i> <i>Reviewed in this issue:</i>	
<ul style="list-style-type: none">• <i>Practical Controls: A Guide to Mechanical Systems</i>• <i>Handbook of Facility Assessment</i>• <i>A History of American Higher Education</i>	
New Products	57
Coming Events	59
Index of Advertisers	60



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Global Partner in Learning

From the Editor

by Steve Glazner

Facilities Manager Reaches 20 Years

Take a look at the covers of the first issues of *Facilities Manager* magazine. The first published issue of *Facilities Manager* was dated Spring/Summer 1985, and those were the days of waxed galley proofs and limited color options, and clip art graphics literally were clipped from a book and pasted down for our cover designs. I'd like to think that we've improved both our look as well as our content over the past 20 years.



I wrote the first article of the first issue. The article was called "The Future of Campus Facilities Management," and I had interviewed six APPA members at the time—Ed Bogard, Gene Cross, Lou Fackler, Harvey Kaiser, Mark Langford, and H.C. Lott—most are names you'll certainly know. I don't recall much of what they said about the year 2000—something about robots and spaceships—but I had intended the new APPA magazine to be something that our members and other readers in education and facilities could learn from and to help them prepare for change. As we know, change is the only true constant.

So we're simply noting that *Facilities Manager* has tried to be a constant

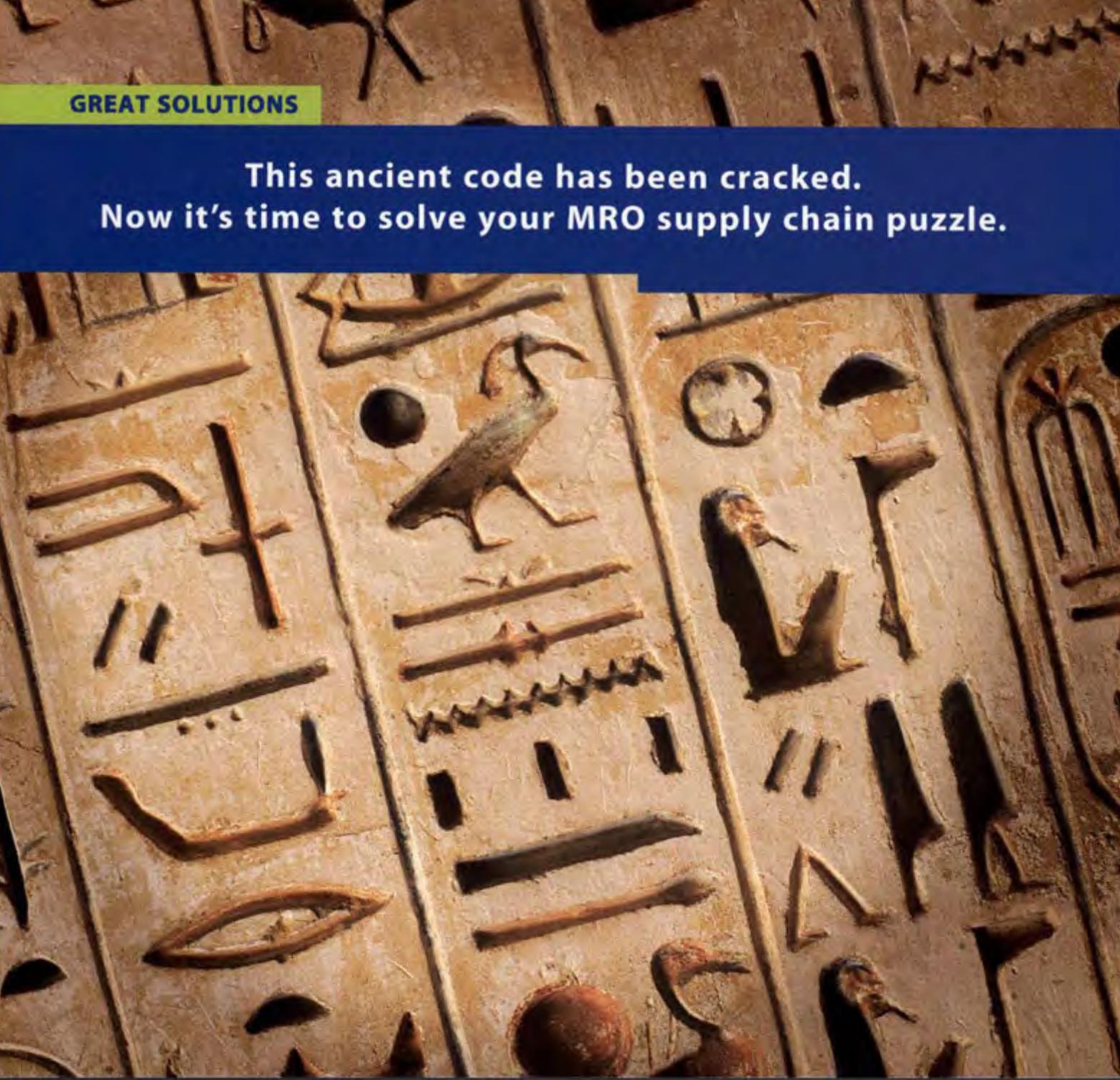


during the past 20 years of incredible change, and that there is much yet to be done.

On a related note, we are taking this opportunity to conduct a periodic readership survey. About 1,000 readers of *Facilities Manager* will receive through regular mail a four-page survey that we hope you will complete for us. The survey is being conducted by an independent entity, so please feel comfortable sharing your opinions about the magazine.

The purpose of the readership survey is several-fold. We want to get a pulse on your thoughts about the magazine as it currently exists, but we also want to gather data on how best to improve the content, design, and format for future issues. In addition, we collect information about your purchasing power, your demographics, and your issues and concerns so that we can bring you the most effective magazine possible.

And if you send us your contact information, we will put your name in a special drawing for one of three exciting prizes: a palm pilot, an iPod, and a FranklinCovey organizer. So please complete the survey if it is sent to you and help us serve you better through continuous improvements to *Facilities Manager*. 📧



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by Betsy Colgan

It's Election Time!

It's time to vote for the 2005-06 officers of APPA. This year, for the first time, Affiliate members can now vote, along with all Institutional representatives. Here are your APPA candidates:

President-Elect: Christopher K. Ahoy, *Iowa State University*, and L. Wayne White, *Utah State University*

Vice President for Professional Affairs: Alan S. Bigger, *University of Notre Dame*, running unopposed

Secretary-Treasurer: Robert J. Carter, *University of Guelph*, and David Gray, *Middle Tennessee State University*

Proposed Bylaws Change

It has been proposed that the reference to the Meritorious Service award be deleted from the Bylaws. It is recommended that this award be treated like all other awards and therefore not mentioned in the Bylaws. The reference to this award is in Article III, section H, and reads as follows:

H. Meritorious Service

Members who have performed meritorious service for the success of the Association may be presented the Meritorious Service Award upon a majority vote of the Board of Directors. Such awards shall be made at the annual meeting of the Association. Not more than three Meritorious Service Awards shall be presented at any annual meeting.

APPA/OECD Conference Announced

APPA and the Organisation for Economic Co-operation and Development (OECD) have joined together to present *Planning, Designing, and Managing in Higher Education*. The conference will be held April 24-27 in San Jose, California. For more information or to register, visit www.appa.org/education/oecdmainpage.cfm.



Experience the Magic!

Mark your calendars for APPA's Educational Facilities Leadership Forum, August 4-6 in Orlando, Florida. Attend meaningful sessions, share your knowledge, and network with colleagues—all this and more available at the Forum. The Forum is open to anyone with an interest in public and private education-based facilities. Registration is now open—visit www.appa.org/education.



Don't Gamble with Your Future!

A graduate of the Institute? Ready to move on? You may be ready for APPA's Leadership Academy, a program designed for those individuals with a desire to lead. In a changing environment, the success of an organization depends on the staff's ability to embrace new roles, new ways of doing things, and new skills. Learn these and more at the Leadership Academy presented June 19-23 at the J. W. Marriott Las Vegas Resort Spa & Golf. For more information and to register, visit www.appa.org/education/professionalleadershipacademy.cfm.

New Facilities Core Data Survey Deadline Extended

APPA's new Facilities Core Data Survey is now open and your participation is invaluable as APPA builds a knowledge base of essential facilities data that will provide us with reliable, credible, and annually updated information. This new survey contains 12 modules. You may complete as many or as few of the modules as you wish, depending on your interest or institutional need. We are now collecting data from the 2003-04 year. APPA will give a free copy of our newest book, *Creating a Service Culture: Making the Customer Connection*, to the first 100 schools that complete 6 of the 12 modules. To participate in the survey, visit www.appa.org/research/fcds.cfm. The survey deadline has been extended to March 31, 2005.



Creating a Service Culture: Making the Customer Connection

Customer service means different things to different people. On an educational campus, facilities officers deal with myriad constituent groups, including faculty, staff, students, parents, and members of the community. This book, written by well-known experts in the educational facilities profession, offers plenty of tips and

Continued on page 8

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Continued from page 6

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Green Power Purchasing Guide Available

How do you buy green power? How do you make a business case for the benefits of buying power from renewable energy providers? These are just a few of the questions a new document titled *The Guide to Purchasing Green Power* is hoping to answer. Incorporating technical advice from researchers at the

Lawrence Berkeley National Laboratory Environmental Energy Technologies Division (EETD), and other institutions, this resource will help organizations diversify their energy supply and reduce the environmental impact of their electricity use. Visit www.buildings.com for complete article.

From @ the Moment

Top Ten Green Projects

The American Institute of Architects' Committee on the Environment (COTE), in partnership with the Environmental Protection Agency's ENERGY STAR and Target Finder program and BuildingGreen, Inc., invites U. S. licensed architects to submit high performance, sustainable design solutions for the 2005 AIA COTE Top Ten Green Projects competition.

This program is an international competition open to all architects. Projects may be located anywhere in the world, but must be designed by an architect licensed in the United States. Entries submitted may be large or small projects, new construction or renovations, and any project type completed after 1994.

For on registration details, visit www.aiatopen.org.

FEMA Releases New Fire Extinguisher Life Safety Video

Due to recent catastrophic fires covered by the media with regards to large public gathering spaces, the Fire Equipment Manufacturers' Association (FEMA) produced a video (on CD-ROM) that discusses portable fire extinguishers, codes, and standards relevant to public meeting spaces and assembly halls, and the benefits of these life-saving devices. Visit www.buildings.com for the complete article. 📺

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Facilities: A Strategic Investment

by E. Lander Medlin

No doubt at your institution programs come and go, students come and go, faculty and staff come and go, and even presidents come and go. However, when you really think about it and look closely, facilities—the buildings and grounds—are the one real constant. Facilities have permanence. The image they make and the impressions they create cannot and should not be underestimated by campus stakeholders.

The total current replacement value for our campus facilities exceeds that of the total endowment by almost threefold. Yet, for most senior institutional officers, this costly and important asset is the least understood. Granted, facilities are no longer viewed as just an expense on the balance sheet, but instead as an asset, a tangible strategic investment. And if properly used and maintained, facilities can be a substantive recruitment and retention tool for students and faculty and can enhance present revenue streams. The additional challenge is to go beyond the tangible benefits represented in dollars and cents to consider their intangible appeal.

Just as a newly purchased house quickly becomes a home in the minds of its family members, so too do your institution's facilities to the faculty, students, staff, and alumni. Ultimately, we all want to make a visceral, emotional connection with and through our facilities. For example, the facilities at your school should create the



perception of safety and security; create that sense of place, that sense of community; represent a place where learning occurs both inside and outside the classroom; and should be the allure for the return of your alumni. The campus—its physical structures and grounds—is what is remembered! What kind of perception are you creating? What type of memories are you making? The decisions you make and the actions you take regarding your long-term planning strategies and your day-to-day operational tactics will make all the difference in the world in whether the perception of your school's infrastructure is positive and memorable. And essential, if we are going to ensure a direct and meaningful connection to the institution's vision, mission, and strategy—its core purpose for being.

Yet, for the facilities professional, it is what is behind those walls that really count. It's a balancing act to:

- 1) ensure the façade provides the curb appeal necessary for a strong institutional competitive advantage;
- 2) ensure the façade is not hung on a decaying infrastructure; and,
- 3) ensure the ability of the institution to maximize the tangible and intangible return on its facilities investment.

Hence, through surveys, focus groups, and one-on-one conversations, you have provided us insight into the critical issues you are facing today and well into the future. Although the top ten critical facilities issues are briefly highlighted below, please visit APPA's website (www.appa.org) where we will focus on one issue each month and provide more detailed information and resources.

- **Resource Scarcity.** Although the economy shows signs of resurgence and recovery, it is clear that the competition for institutional resources will remain fierce. Yet as stated in a recent *Chronicle of Higher Education* article (January 7, 2005) titled "Outlook 2005: A Year of Recovery," "... many administrators are focusing on not-so-glamorous, fiscally conservative strategies: energy conservation . . . and catching up on maintenance." We have an opportunity and we need to be prepared to meet this opportunity with solid strategies and plans for reducing energy and utilities consumption and costs and emphasizing renewal and recapitalization programs.
- **Sustainability.** The Native Americans have captured the meaning of sustainability in their "Law of Seven Generations." This law means that decisions are based on consideration of the consequences of one's actions over seven generations. This kind of thinking and action for planning, designing, constructing, and maintaining our facilities, utilities infrastructure, and grounds over their life cycle represents a sea-change in thinking and planning for our campuses. However, it is precisely this holistic approach we need regarding sustainability and indeed all facilities issues.

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

- **Information Technology.** IT demands and requirements in today's facilities are burgeoning. Effectively integrating changing technologies in classrooms and managing technologically sophisticated building systems and equipment will be a key factor for our success. We must design for flexible and adaptable spaces if we are to keep pace with shorter and shorter IT life cycles.
- **Space Planning, Management, and Utilization.** We cannot forget that space links everyone on campus and these places are what we value and treasure. However mundane it seems, it is essential to have an accurate asset inventory as baseline data and standards for any facilities work. This will help determine how well you are using what you have. Nevertheless, the mechanics of the data and its collection is just the beginning. More importantly, it requires an assessment of how this data and information aligns with the institution's mission and a determination of what it means for future institutional decisions.
- **Deferred Maintenance/Modernization.** It is important to prepare a comprehensive deferred maintenance plan that incorporates facilities condition data, aligns with the campus master plan, addresses energy conservation measures, and supports the institutional mission. The trick here will be to change the thinking from a look backwards (deferred maintenance) to a more forward-looking approach (life cycle costing) to preserve your facilities' investment. It will be critical for senior institutional officers to understand that throughout the life of a project, the "total cost of ownership" consists of approximately one-third for new construction costs; one-third for operations, maintenance, and utilities costs; and one-third for the renewal and recapitalization costs.
- **Energy and Environmental Management.** These two areas go hand-in-hand if we take sustainability seriously. Further, it will be important to establish a good energy resource management

Having good credible data, consistent terminology and definitions, appropriate standards, common metrics and measures are only pieces of the equation. These items must enhance our ability to establish priorities, make informed decisions, and drive solutions that are in alignment with the institution's mission.

plan that addresses fuel flexibility, system reliability, vulnerability, sustainable design practice, alternative energy use, life cycle impacts, and energy conservation measures.

- **Performance Measurement/Accountability.** Having good credible data, consistent terminology and definitions, appropriate standards, common metrics and measures are only pieces of the equation. These items must enhance our ability to establish priorities, make informed decisions, and drive solutions that are in alignment with the institution's mission. There is no real value to the measures in and of themselves; we have to take action with them.
- **Safety and Security.** Government regulations, code compliance, and unfunded mandates continue to plague us both financially and operationally. As "owners," the life safety and health issues on our campuses are our highest priority. Nevertheless, complying with federal, state, and local mandates, including security requirements intended to prevent terrorism, is likely to make the operation of campus facilities more expensive in the coming year.
- **Customer Service.** Communication, both internally and externally, is the key ingredient in building

long-term, collaborative relationships and trust within the facilities department and throughout the community. More time and effort will be needed to enhance the communication skills of all facilities staff if we are to positively impact customer service.

- **Workforce Issues.** In essence, we are all concerned about the recruitment and retention of qualified technical staff and their content/skills training and development. In addition, the ability to develop an engaged workforce with competent, focused, and confident staff represents the ultimate productivity challenge. Frankly, without good people, it is practically impossible to ensure good facilities.

Dealing with all these issues efficiently and effectively will be an important measure of our success during the coming few years. Yet, even more importantly, will be our ability to adequately connect facilities issues to the institution's mission. As the late Ernest Boyer said, "Good facilities are essential to good learning," which as we all know is the core purpose of the institution. However, we must still make the business case by creating the connection in myriad ways. Collaboration will be key.

In the final analysis, we must ensure that our facilities:

- create a visceral, memorable, and positive connection with the community,
- are viable and healthy structures well beyond the façade we create,
- are sustainable, and
- enhance the institution's revenue streams to a greater degree than ever before. 🏛️

News Flash on Flash Protection

by Michael A. Anthony, PE.

The skies are filling with friends of National Electric Code (NEC) now that 2005 NEC Handbook has been published by the National Fire Protection Association. A new "Flash Protection" industry has been spawned around a single paragraph in Article 110.16, and an up-to-the-moment cadre of experts is ready to come to your campus. Electrical professionals throughout higher education may ask for money to meet the flash protection requirement so facility executives should know the basics.

The key idea is that people need to be protected from the hazards of electricity that arise even when you do not touch a live part. A common example of a flash hazard would be plugging in a space heater when the control dial is "ON." This would cause a flash at the outlet site. Most electrical injuries occur because of flash (an instantaneous ionization of the air around a conducting surface) and not from accidental contact. Persons within a "flash protection boundary" need to wear personal protective equipment (PPE)—a so-called "moon suit"—in order to protect themselves from incidental energy (measured in calories per square centimeter). The mathematics that determine the boundary shows up in one of the NEC's related standards—*NFPA 70E, Standard for Electrical Safety in the Workplace*. You will find this standard referenced as a fine print note in

Mike Anthony is a senior electrical engineer with the Architectural and Engineering Services, University of Michigan, Ann Arbor, Michigan. He can be reached at maanthon@umich.edu.



Article 110.16. All fine print notes in the NEC handbook are offered to users of the code for reference only. Fine print notes are not NEC requirements.

During the writing of the 2005 NEC Handbook, the committee responsible for the flash protection requirement debated whether detailed calculations for the selection of a moon suit ought to be moved from a fine print note into the main body of Article 110.16. The practical effect of this move would have been to require flash protection boundary calculations for every panelboard in every building on every campus in America. By abstaining on a vote to accept the proposal to require these calculations, the APPA code advocacy representative effectively gave the industry (and others) another three years to grasp the implications of, and prepare for, a more rigorous flash protection requirement. Right now the 2005 NEC Handbook only requires **marking** (with a sign) that a flash hazard exists.

Even this apparently modest requirement has drawn new questions of which the following are typical:

Where do you put the arc flash sign—on the inside or the outside?

It is easy enough to put the mark on free-standing switchgear in a petrochemical plant where few people are at risk. For the uncountable numbers of flush mounted panelboards mounted in, say, public corridors, the NEC is silent. Facility

SECTION FROM NEC 2005 HANDBOOK

PROPOSED LANGUAGE

110.16 Flash protection. Switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers, for other than dwelling occupancies, that are likely to require examination, adjustment, servicing, or maintenance while energized, shall be field marked with a label indicating the incident energy available, or the rating of needed protective clothing in calories per square centimeter (cal/cm^2), to warn qualified persons of potential electric arc flash hazards.

Preliminary vote: Accept 7; Reject 3; Abstention 1. The APPA vote was the abstention which with an 8-4 majority required to change the 2002 NEC, the proposal was effectively rejected... for now.

FINAL LANGUAGE

110.16 Flash protection. Switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers, for other than dwelling occupancies, that are likely to require examination, adjustment, servicing, or maintenance while energized, shall be field marked to warn qualified persons of potential electric arc flash hazards.

Final vote: Only the addition of **meter socket enclosures** appears in the final language of the 2005 NEC Handbook.



Courtesy National Fire Protection Association

owners may not be so keen to have flash protection signs on flush mounted panelboards on fine architectural walls. Some people believe that the sign itself invites trouble.

Recommendation: put a small sign of your own making on the outside and another sign on the inside of the panelboard detailing the PPE required. A second fine print note below Article 110.16 refers to ANSI Z535.4-1998 – *Product Safety Signs and Labels* as a guide. All the flash protection sign manufacturers will conform to this standard.

Do we need a short circuit study? No. The 2005 NEC Handbook only requires a warning mark. **Recommendation:** If you decide to exceed the 2005 requirement, a short circuit study may be the least expensive part of determining flash hazard. The costliest part may be in getting accurate as-built circuit diagrams necessary to do the short circuit study. Begin assembling workgroups to verify circuitry within your buildings.

How do we protect our people from flash hazards? Get them personal protective equipment. At the high end, an XX-Large 40 calorie/cm² outfit with hood, jacket, bib overall, and storage bag runs about \$1000. Add to this the cost of gloves and boots.

Recommendation: Review your policies regarding who gets near the

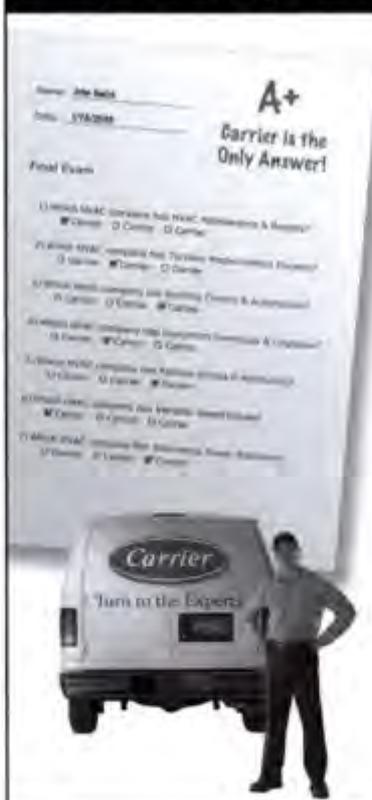
switchgear required to be labeled. There might be panelboards installed in dormitory corridors where there is student access. You may decide, for example, that qualified electricians should be the only people resetting circuit breakers. Unlike security guards or maintenance personnel, qualified electricians are trained to clear faults before attempting to close breakers again. Reclosing a circuit breaker can cause flash even on a 208/120V panelboard. Article 100 of the NEC suggests that even a 20A breaker would require a moon suit. Discuss with your electricians the degree to which “over-outfitting” electricians with moon suits causes greater hazard when working on smaller panelboards.

Fine minds, when placed around a table, are capable of producing complete nonsense. Our industry, and oth-

ers, needs more time to prepare for a change of this magnitude. The cost of implementing rigorous flash protection marking is incalculable if you assume that every piece of switchgear in America will require \$100 of engineering, material, and labor to meet a requirement for a warning sign as shown on the next page. It is not a matter of “if” but a matter of “when” this requirement becomes part of the NEC codes.

In recent decades the power industry adapted quickly to new information regarding polychlorinated biphenyls (PCBs) and harmonics. While solving one problem, electrical professionals learned about even greater problems (and more promising opportunities) along the way. One immediate consequence of the raised level of debate on flash protection is that at least one manufacturer has discovered a low-cost way to modify the control systems for substation

Multiple Choice Question



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secondary switchgear sections so that flash hazards are reduced by eliminating time delays between circuit breaker action. The impetus for this innovation would not have existed had not the flash protection issue first emerged in the NEC committee meetings.

I look forward to more positive, unintended consequences. Facility executives can make substantial progress in electrical safety by doing the simple things well. Updating circuit diagrams is always a good idea even without a flash protection clause in the NEC. Updating circuit diagrams is drudgery, but the organization that helps its electrical professionals master the drudgery is in the best position to innovate. 🏠

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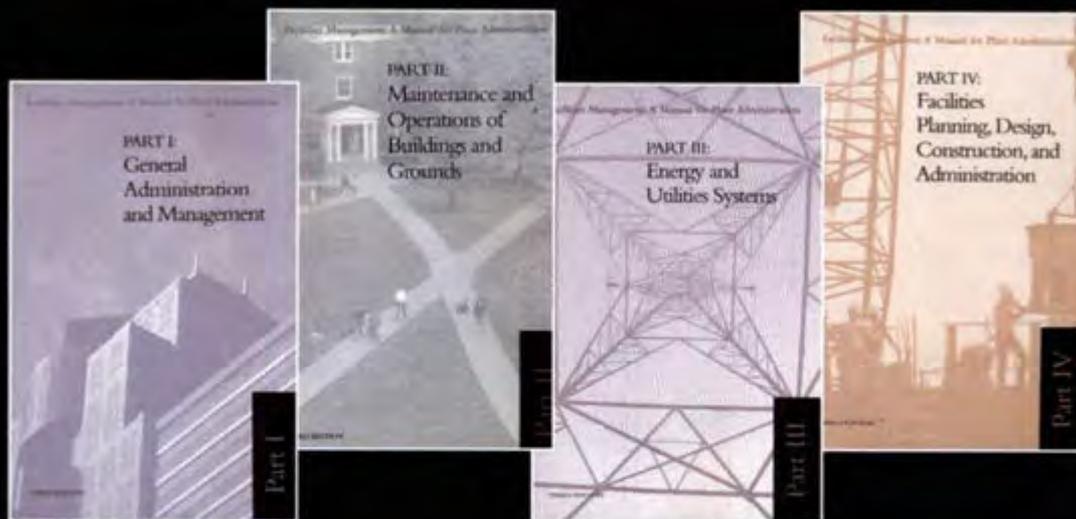
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Historically Black Colleges and Universities: Who Are They?

by Sam Polk Sr., Ph.D.

Historically black colleges and universities (HBCUs) are accredited institutions of higher learning established prior to 1964 with the principal mission of educating African Americans. Since their beginning in the 1830s, HBCUs have evolved and grown and today number 103 schools located in 20 states, the District of Columbia, and the Virgin Islands. Historically black colleges and universities enroll more than 370,000 students and graduate about one-third of all African American students each year, according to the National Association for Equal Opportunity in Higher Education (NAFEO). As shown in the chart on the next page, HBCUs are found in four of APPA's six regions; only the Rocky Mountain and Pacific Coast regions do not have any. HBCUs include public and private schools, two- and four-year institutions, and graduate and professional schools. Many of these schools have been educating students for more than 100 years.

HBCUs, despite many obstacles, are committed to an educational process where neither ethnicity nor economics is allowed to stand in the way of any student realizing his or her true potential. It is a commitment these schools still honor and a goal they will work to achieve one student at a time. These institutions know the value of "learning for life" and "learning by doing."

Sam L. Polk Sr. is the director of the Department of Facilities Management and Associate Professor at Tennessee State University in Nashville, Tennessee and serves as APPA's Vice President for Educational Programs. He can be contacted at spolk@tnstate.edu.



and that work experiences, internships, and hands-on experimentation are an integral part of an education that prepares students for the real world of the twenty-first century.

Before the Civil War, higher education for black students was virtually non-existent. A school called The Institute for Colored Youth was started by a group of Philadelphia Quakers in 1830 and later renamed Cheyney University, thus becoming the first college for blacks. College education was also available to a limited number of black students at schools like Oberlin College in Ohio and Berea College in Kentucky (both colleges were hotbeds of abolitionists and believed in interracial education). Only two historically black private colleges, Lincoln University in Pennsylvania and Wilberforce University in Ohio, existed prior to the Civil War. Years later, with the abolition of slavery, the Morrill Land-Grant Act of 1862 allowed the opening of colleges and universities to educate farmers, scientists, and teachers. Although many such institutions were created, few were open or inviting to blacks, particularly in the South. Only Alcorn State University in Mississippi was created explicitly as a black land-grant college. Twenty-eight years later, the second Morrill Act of 1890 was passed. This act specified that states using federal land-grant funds must either make

their schools open to both black and white students or allocate money for segregated black colleges to serve as an alternative to white schools. A total of 16 black institutions received land-grant funds from the Morrill Act of 1890.

Most of today's public HBCUs were founded by state legislative action between 1870 and 1910. Prior to this time, many black organizations, along with support from the American Missionary Association (AMA), black churches, and the Freedmen's Bureau, were responsible for establishing private colleges and universities to educate blacks. Between 1861 and 1870, AMA funded seven black colleges and 13 normal or teaching schools. These institutions became the backbone of black higher education, producing African American leaders for generations to come, including such notables as Booker T. Washington and W. E. B. Dubois.

By 1928, attendance at HBCUs increased substantially as did financial support from the government and individual philanthropists such as John D. Rockefeller and Andrew Carnegie. HBCUs also gained credibility and respect when the Southern Association of Colleges and Schools began formally surveying and accrediting them.

HBCUs began to face many new challenges; the great depression and World War II left many black colleges in a financial crisis. Most land-grant HBCUs were still dismally underfunded when compared to their white counterparts. Private HBCUs were in an even tougher bind. In 1943, Dr. Fredrick D. Patterson, president of the Tuskegee Institute, published an open letter urging HBCUs to band together to pool their resources and fundraising abilities. The next year, the United Negro College Fund (UNCF) began

APPA REGIONS AND HBCUS

APPA REGIONS*

STATE: *HBCU Institutions*

EASTERN (ERAPPA)

DELAWARE: *Delaware State***

DISTRICT OF COLUMBIA: *Howard, U District of Columbia*

MARYLAND: *Bowie, Coppin, Morgan, U of Maryland-Eastern Shore*

PENNSYLVANIA: *Cheyney, Lincoln*

MIDWEST (MAPPA)

MICHIGAN: *Lewis College of Business*

OHIO: *Central State, Wilberforce*

SOUTHEASTERN (SRAPPA)

ALABAMA: *Alabama A&M, Alabama State, Bishop State, Concordia, J. F. Drake, Lawson, Miles, Oakwood, Selma, Stillman, Talladega, Trenholm, Tuskegee, Shelton State*

FLORIDA: *Bethune-Cookman, Edward Waters, Florida A&M, Florida Memorial*

GEORGIA: *Albany State, Clark Atlanta, Fort Valley, Morehouse, Morehouse-Medicine, Morris Brown, Paine, Savannah State, Spelman*

KENTUCKY: *Kentucky State*

LOUISIANA: *Dillard, Grambling, So Univ A&M, So Univ-New Orleans, So Univ-Shreveport, Xavier*

MISSISSIPPI: *Alcorn, Coahoma, Hinds, Jackson State, Mary Holmes, Mississippi Valley, Rust, Tougaloo*

NORTH CAROLINA: *Barber-Scotia, Bennett, Elizabeth City, Fayetteville State,*

Livingston, NC A&T, NC Central University, Saint Augustine, Shaw, Winston-Salem, Johnson C. Smith

SOUTH CAROLINA: *Allen, Benedict, Claflin, Denmark, Morris, SC State, Voorheers*

TENNESSEE: *Fisk, Knoxville, Lane, LeMoyne-Owen, Meharry, Tennessee State University*

VIRGIN ISLANDS: *University of the Virgin Islands*

VIRGINIA: *Hamilton, Norfolk State, Saint Paul, Virginia Seminary, Virginia State, Virginia Union*

WEST VIRGINIA: *WV State, Bluefield State*

CENTRAL (CAPPA)

ARKANSAS: *Arkansas Baptist, Philander Smith, Shorter College, UA-Pine Bluff*

MISSOURI: *Harris-Stowe, Lincoln*

OKLAHOMA: *Langston*

TEXAS: *Houston-Tilluston, Jarvis Christian, Paul Quinn, Prairie View, Southwestern Christian Texas College, Texas Southern, Wiley College*

Notes:

* Of the HBCUs that are APPA members, 13 percent are in the Eastern Region, 2 percent in the Midwest Region, 77 percent in the Southeastern Region, and 13 percent in the Central Region; only the Rocky Mountain and Pacific Coast regions do not include any HBCUs.

** HBCUs in italics indicate APPA membership.

soliciting donations to fund private HBCUs with far greater efficiency than any one of its member colleges had ever done alone. Its motto as you may recall is "A mind is a terrible thing to waste."

During the early 1950s, the National Association for the Advancement of Colored People (NAACP) turned its efforts from educational equality to school desegregation. As a result, new optimism for HBCUs was realized. In

1953, HBCUs became the beneficiaries of the Supreme Court's decision in the case of *Brown v. the Board of Education*. The court ruling that "separate but equal" schooling was anything but equal meant that states would be forced to better fund HBCUs and open their other universities to black students. The Civil Rights Act of 1964 provided the federal government greater power to enforce desegregation.

In 1965, the federal government provided aid to HBCUs through the Higher Education Act. This was followed by another important judicial decision, *Adam v. Richardson*, in which ten states were found in violation of the Civil Rights Act of 1964 for supporting segregated schools. These states were ordered to work actively to integrate institutions, as long as the integration was not carried out at the expense of HBCUs. The administrations of Presidents Carter, Reagan, and George H. W. Bush made significant commitments to HBCUs with programs to strengthen and expand the capacity of HBCUs (Carter), an executive order reversing the effects of previous discriminating treatments of HBCUs (Reagan), and establishment of a commission in the Department of Education responsible for advising the President on matters regarding HBCUs (Bush).

In 1992, a decision by the United States Supreme Court in *United States v. Fordice* required that Mississippi abolish the remnants of a dual segregated system of education. A similar agreement was made in Tennessee with the *Geier v. Sunquest* litigation settlement in 2001.

In 2004, a 29-year-old legal battle over state support was ended when the United States Supreme Court cleared the way for a \$500 million desegregation settlement for three HBCUs: Jackson State, Mississippi Valley State, and Alcorn State. This settlement will allow the correction of past facility neglect due to inappropriate state funding support.

As you can see, HBCUs have come a long way and today continue to provide a unique education for African Americans and all other students. Black students who attend HBCUs graduate with greater frequency than black students at predominately white universities and are more involved in academic and social events.

According to the 2002 edition of *The Princeton Review*, three of the pub-

Continued on page 20

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Continued from page 18

lic, four-year HBCUs now have a majority of white students: Lincoln University in Missouri, 57 percent; West Virginia State College, 86 percent; and Bluefield State College also in West Virginia, 89 percent.

Other public HBCUs with sizable white enrollment include the University of Arkansas at Pine Bluff, Delaware State University, Savannah State University in Georgia, Kentucky State Uni-

versity, Bowie State University in Maryland, Elizabeth City State College and Winston-Salem State University in North Carolina, and Langston University in Oklahoma.

While some educators and administrators say this is a sign that HBCUs are successfully competing with other institutions, others fear that the heritage and mission of black schools may be jeopardized. Experts say that among others, the reason for this diversity is

due in part to the effect of desegregation, aggressive recruitment, economic value, and expansion of high quality undergraduate, graduate, and professional program offerings.

Recently, there have been financial problems at two HBCUs—Grambling in Louisiana and Morris Brown in Georgia. The talk of closure is devastating, but is consistent with the history of HBCUs being under funded, confronted with large deferred maintenance backlogs, and enduring a shortage of maintenance staff and management personnel. Since 1976, at least a dozen HBCUs have closed due to poor funding and problems among their leadership. Another six are on probation. This alone is why APPA should know and reach out to HBCUs for membership and to offer our knowledge, expertise, and yes, resources. Currently, 35 percent (36 out of 103) of all HBCUs hold membership in APPA. After all, it is APPA's goal to have all institutions of higher learning accept APPA as their "Association of Choice."

Even with their storied history, HBCUs are alive, yet struggling, and still meeting their original purposes. As evidence of this, according to the African American Registry, HBCUs account for 3 percent of all institutions of higher learning in America, enroll 16 percent of all African American students in higher education, and graduate 30 percent of all African American students earning bachelors' degrees. On a specialized level, HBCUs have trained 75 percent of black Ph.D.s, 85 percent of black physicians, 46 percent of black business executives, 50 percent of black pharmacists, 50 percent of black engineers, 50 percent of black attorneys, 45 percent of black dentists, and 75 percent of black veterinarians. Additionally, HBCUs are responsible for 53.4 percent of African American public school teachers. Because of these numbers, HBCUs continue to be a significant part of the higher education in the United States. 🏛️

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Historically Black Colleges and Universities Trivia Quiz



1. **Three institutions now enroll over 50 percent white students. They are:**
 - a. Fort Valley, Texas Southern, Jackson State
 - b. Bluefield State College, Lincoln University, West Virginia State
 - c. Fayetteville State, Fisk, Coppin State
2. **HBCUs are accredited institutions established with a mission of educating African Americans students and**
 - a. Institutions established prior to the 1830s
 - b. Institutions established prior to 1964
 - c. Institutions existed prior to the Civil War
3. **Which institution was the first HBCU?**
 - a. Cheyney State University
 - b. Howard University
 - c. Lincoln University
4. **Today there are _____ HBCUs in the United States.**
 - a. 1300
 - b. 113
 - c. 103
5. **This organization's motto is "A mind is a terrible thing to waste."**
 - a. NAFEO
 - b. NAACP
 - c. UNCF
6. **Over 75 percent of HBCUs are located in this APPA region.**
 - a. CAPP
 - b. PCAPP
 - c. SRAPP
7. **Which institution was created explicitly as a land-grant college?**
 - a. Alcorn University
 - b. Albany State
 - c. Allen College
8. **The 1953 Brown v. the Board of Education required all institutions to:**
 - a. Provide separate but equal access to education
 - b. Open their doors to blacks
 - c. Admit only blacks who served in the armed forces
9. **The only Catholic HBCU is**
 - a. Fisk University
 - b. Tougaloo
 - c. Xavier University
10. **HBCUs educate annually about ____ of all African American students.**
 - a. 50 percent
 - b. 90 percent
 - c. 33 percent

Answers on page 60.

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Offices on Campus

by Ira Fink, Ph.D., FAIA

This article looks at offices on campus. Why? Offices are where university employees work, hang their pictures, make their calls, hold meetings, advise students, use their computers, conduct research, and, in many cases, store the operational histories of their institution. It is where many, if not most, university employees spend their entire working day as well as their entire university career.

Excluding housing, offices are also the single largest use of space on campus. Square footage devoted to offices exceeds space allocated to classrooms and class laboratories. Office space use at research universities even exceeds the area devoted to research laboratories. In fact, excluding housing, the number of rooms or spaces devoted to office use on a campus generally exceeds all of the rest of the assigned campus rooms and spaces combined.

Despite the significance and importance of offices as a campus space use, the literature of higher education is nearly devoid of studies about offices. This article seeks to fill this gap and looks at offices as a space use, reviews and provides guidelines and illustrations on office size, and describes and discusses policies on the allocation of offices.

Ira Fink is president of Ira Fink and Associates, Inc., University Planning Consultants, based in Berkeley, California. He can be reached at ira@irafink.com.

This article is the fourth of a series I have authored on campus spaces. Previous articles have reviewed classrooms, class laboratories, and research space.¹

The Need For Office Spaces

In contrast to many types of institutional enterprises, much of the work and the preparation for work in universities is done alone, not in groups or teams. This is true for university academic, administrative, and service activities. This solo pattern of university work—thinking, writing, working on a computer, and talking on the phone—requires assigned places for one to work alone and, on occasion, to come together to work in groups.

Offices are Important

Offices as a place of work are important for individuals to be productive and for institutions to be successful. As noted in the book *Tomorrow's Office*, "Primary spaces in the office should make it easy for individuals to concentrate and groups to interact. A balance of different spaces helps to create the conditions in which skills and talents can develop."²

As simple and obvious as it may seem, university faculty and staff in offices work while seated and their primary working area is a flat surface—a desk, a desktop or a table. The combination of seating and flat work surfaces creates the gen-

eral workspace requirement for every university employee whose workplace is an office. To this baseline amount must be added the space to store the items and products of work and meetings. This combination of spaces requires, on average, more than 150 to 200-square feet per person.

Group Work Space

In addition to the office, the other primary work space is a conference room, a place for groups to interact and to meet formally. One's status in the hierarchy of the university usually determines the number and frequency of meetings and thus the total size of the group work area needed. For those who meet frequently with others, their private office work space is sized to accommodate the additional meeting needs. For those whose work requires occasional meetings or presentations, their meeting space is a shared conference room.

Office Service and Support Space

Offices and conference rooms are also supported by a variety of service areas, including mail rooms, file areas, copier, scanner and fax rooms, vaults, coat rooms, waiting and reception, and the need for storage, both for supplies and the archival work products of the office. At many campuses, office support areas include informal meeting spaces, including faculty and staff break rooms, kitchenettes, and pantries.

Because higher education is labor intensive, the need for offices, conference rooms, and related service and support areas becomes the dominant space use on campus.

The Office as a Space Use

To understand more fully offices as a campus work space requires addressing two issues—first, what constitutes office space, and second, how much space offices consume.

What Constitutes Office Space

As described above, offices are defined as individual, multi-person, or workstation spaces specifically assigned to the various academic, administrative, and service functions of a college or university for carrying out desk-based activities supporting those activities. Office areas need not have clearly visible physical boundaries and might include open landscaped offices and open reception areas. In these instances, logical physical boundaries are assigned for the calculation of square footage.²

For purposes of this article and for measuring office space on campus, offices are all spaces that fit within the National Center for Education Statistics (NCES) Room Type Codes 300 to 399.⁴ In using this coding system, NCES suggests campuses classify office space into four broad types of office and office related uses by using the following Room Type Codes:

Room Type Code 310, the office

Room Type Code 315, office service

Room Type Code 350, conference rooms

Room Type Code 355, conference room service

In simplest terms, service uses apply to those spaces that support the basic room use. For example, a copier/fax room (room type code 315) is a service room for an office (room type code 310). Other types of office service uses would be a reception area, a closet, or a mailroom. A pantry (room type code 355) is a service area for a conference room (room type code 350). Other conference room services uses could include audio-visual equipment or furniture storage.

Using this straightforward NCES coding system provides basic information about key functions of offices as a campus space use. It is the first step toward understanding the amount and distribution of office space use and how that distribution occurs. More about this topic is covered later in this article.

Space Devoted to Office Use

Finding data about office use, or any type of space use on campuses, is not easy. There is no uniform, national repository for this information, although the Society for College and University Planning (SCUP) is beginning to collect campus space data. Records my firm has assembled on campuses where we have worked on space management projects and from universities who have shared their data provides the information base for this article.

Offices Are the Single Largest User of Space

I estimate, based on this data, that offices as a total space use are approximately one-quarter of the non-residential space on a campus, as shown in Table 1. The distribution of office space among the ten campuses in this table ranges from 21 percent to 30 percent of all non-residential space on their individual campuses. (As a confirmation of the amount of office space on campuses, Anthony Vaughn of the University of Nevada, Las Vegas provided base information on 28 institutions they use for space comparison purposes. On average, at these large, land-grant universities, 28 percent of the non-residential space was office space.)

What is surprising given the attention paid to other campus space use, and as this table further illustrates, office space use at these ten campuses equals or exceeds the amount of space in classrooms, class laboratories, and research laboratories combined.

Offices Are the Largest Room Use

Offices also represent the largest number of rooms on these ten campuses. As shown in Table 1, more than 50 percent of the rooms or spaces on these campuses are in office space use.

TABLE 1
Distribution of Academic, Administrative, and Support Space at Ten Public Colleges and Universities, Excluding Housing

NCES Room Use Codes and Room Types	Distribution of Space at 10 Public Universities		Total Number of Rooms	Percentage Distribution by Room Type
	Average	Range		
100-199 Classrooms	4.2%	2.9 to 7.1%	3,929	2.3%
200-249 Class Laboratories	7.6	2.9 to 13.1%	10,955	6.4%
250-299 Research	10.2	6.9 to 15.1%	20,800	12.0%
300-399 Office	25.1	20.8 to 29.9%	89,406	51.8%
400-499 Library/Study	6.0	3.4 to 9.4 %	4,212	2.4%
500-599 Special Use	13.1	7.8 to 24.7%	11,170	6.5%
600-699 General Use	9.7	6.2 to 15.5%	10,439	6.1%
700-799 Support	19.4	5.2 to 32.4%	7,861	4.6%
800-899 Health Care	4.7	0.0 to 7.9%	13,660	7.9%
TOTAL	100.0%		172,432	100.0%

Source: Ira Fink and Associates, Inc., based upon data from 10 Public Universities

In other words, excluding housing, the number of rooms and spaces in office use on these ten campuses exceeds the total number of rooms in all other campus uses.

Office Size

While space for carrying out other university functions, such as sitting in a classroom, working in a class laboratory or conducting research in a laboratory, is generally related to space needs based on a uniform station size for each activity, this is not necessarily true of office space.

Office Size Based on Rank

The size or area of offices is based not only on the work to be done but also on the rank or position of the person within the university hierarchy. Although it is a given that individuals in higher echelon university positions generally spend more time meeting with others and therefore require larger offices with more seating, these individuals are also provided more office space as a result of their university status. Moreover, each university uniquely measures or calculates the amount of space needed per office for individuals in a variety of job classifications.

Space Needed in Offices

One would expect university work by faculty or staff classification to be somewhat similar from one institution to

another, and thus the space needed to do this work would also be similar or uniform in size from one campus to another. This is not the case. Each institution computes and provides or assigns office space based on its own formulations. Some institutions are required to follow state or legislative office size space mandates, while others have developed their own office planning guidelines. Many campuses have no office space standards or guidelines; with each new or renovated building project, the size of the office is redefined.

Office Space Planning Standards

Scott Shader of the University of Missouri recently compared office space planning standards at 13 universities.³ For purposes of this article, I have summarized Shader's work in Exhibit 1. As shown in Exhibit 1 on page 26, for most work classifications there is a 50 to 100 percent variation in the size of office space allotted by position when measured at the campus with the lowest space allocation to the campus with the highest.

For example, faculty offices in Shader's campus comparisons ranged in size from 100 asf to 180 asf. A professional staff office

space could vary from 100 asf to 140 asf, a director's office from 140 asf to 180 asf, and an associate vice president office space from 150 asf to 280 asf.

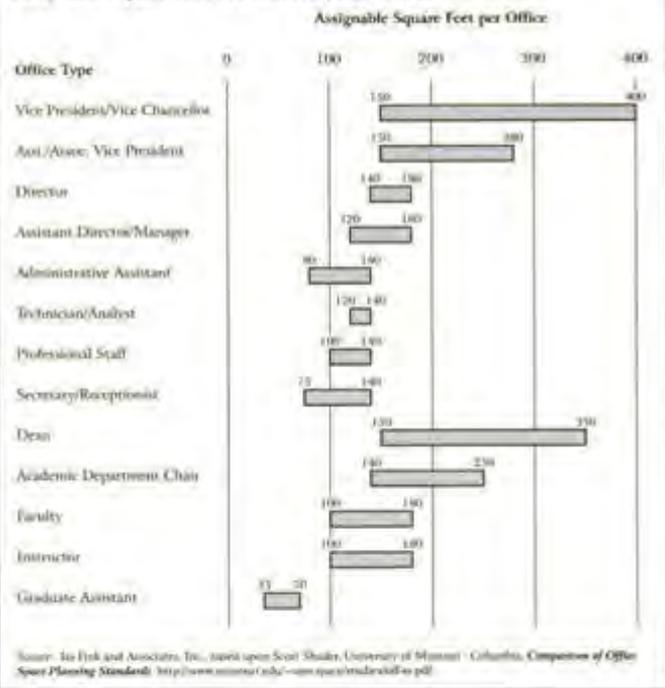
I do not know why there is so much variation. I suspect, although I have not done the analysis, that campuses at the low end of the range with respect to office space allocation standards are also at the low end of the range in space allocation for all university activities, and those at the high end are likely to be the most generous for all other space on campus. At campuses where faculty offices are small, faculty often keep their libraries at home and work from home, thereby precluding students from meeting with them except during scheduled office hours.

Space Planning Exceptions

There are exceptions to the general rule that status determines office size. For example, at the new campus of Soka University of America, in Aliso Viejo, California, the campus policy was one of equity in office space. All offices from the president's office, to the faculty, to the staff and the custodians, were the same size. Each received 165 square feet.

At the Gates Computer Science Building at Stanford University, faculty offices are each 185-square feet. This generous office allows sufficient space for each faculty office to accommodate two large-screen computer monitors while meeting other operational needs.

Exhibit 1
Assignable Square Feet Per Office By Office Type



Office Space in Older Buildings

A review of office space in older universities, where many buildings were built in the latter part of the 19th century and early part of the 20th century and are still in use today, shows individual offices used to be much larger than new office space on campus is today. At one campus with many older buildings, the average faculty office was 170-square feet, with nearly 20 percent of the 837 faculty offices exceeding 200-square feet.

Average Square Footage Per Office

To provide some measure of existing office space, Table 2 above illustrates the average square footage per office space at five public and two private universities, based on their room use space inventory. This table shows a range in existing average office size from 136 asf to 189 asf per office. The table also illustrates that office service space, conference room space, and conference room service space is, on average, larger at the five public universities than at the two private universities. This is a reflection of the differences in scale between the institutions, with the public universities in the table each having an enrollment approximately five times larger than the privates, and thus more need for file rooms, waiting and reception, larger meetings, etc.

Office Space Planning Guidelines

To establish a baseline for allocating office space in new or renovated buildings, we use the office space planning guidelines shown in Table 3. These office space guidelines are based on the amount of space needed to accommodate the furniture and furnishings of the various types of office spaces shown.

TABLE 2
Average Space Per Office Space, Among Existing Universities

NCES Room Code	Room Use Type	Range, ASF Five Public Universities	Range, ASF Two Private Universities
310	Offices	136 - 189 asf	154 - 184 asf
315	Office Service	130 - 134 asf	81 - 120 asf
350	Conference Room	210 - 397 asf	222 - 269 asf
355	Conference Room Service	45 - 107 asf	106 asf

Source: Ira Fink and Associates, Inc., based upon data from 10 Public Universities

How Big Should Offices Be?

One effect of increasing office size is to be able to accommodate more useable furniture in an office. When the office increases beyond a certain size, the additional furniture is not desktop furniture, but rather stand alone furnishings such as a couch, side chairs, or free standing tables.

To illustrate this point, the following four offices (Exhibit 2) illustrate different furniture layouts as the size of an office is increased from a floor area of 105-square feet, to 131-square feet, 168-square feet and eventually 210-square feet. In each of these illustrations the width of the office is held constant at ten feet, six inches.

In the 105-square foot office, there is a limited area for the desktop, as well as visitor seating and files. While the space serves as an office, it is too small for many types of administrative work. At 131-square feet, the desktop area is increased to span the width of the room. At this size, the office is fully functional, but not overly generous. At 168-square feet, the desktop, seating area, and files remain the same, but additional credenza type furniture can be added to the room. This

Table 3
Office Space Planning Guidelines

Type of Space	ASF
Dean's Office	300
Associate Dean	180
Director	180
Faculty Office	140
Administrative Office	120
Administrative Work Station	90
Graduate Student Office (Shared by 3)	135
Work-Study or Other Student Workstation	60
Small Conference Room (Seats 8)	200
Medium Conference Room (Seats 12)	300

Note: In addition to the above square footage, an additional 20 percent of the total suite square footage is added for office suite internal circulation.

Source: Ira Fink and Associates, Inc.

increased area allows more furniture to be placed in the office, but not more seating. At 210-square feet, the office accommodates all of the above uses and a small table for four persons as well. This office is actually too large for most administrative and facility needs. All of the furniture needs of this office can be accommodated in 180-square feet.

These illustrations also show that careful office space planning and the use of modular wall hung furniture and cabinets can have on maximizing office space. In all four illustrations, the door into the office is kept 12 inches away from the corner of the room, allowing a continuous set of file cabinets, bookcases, or closets to be placed along the entry wall. Each of these offices is shown as accommodating the requirements of the Americans with Disabilities Act (ADA).

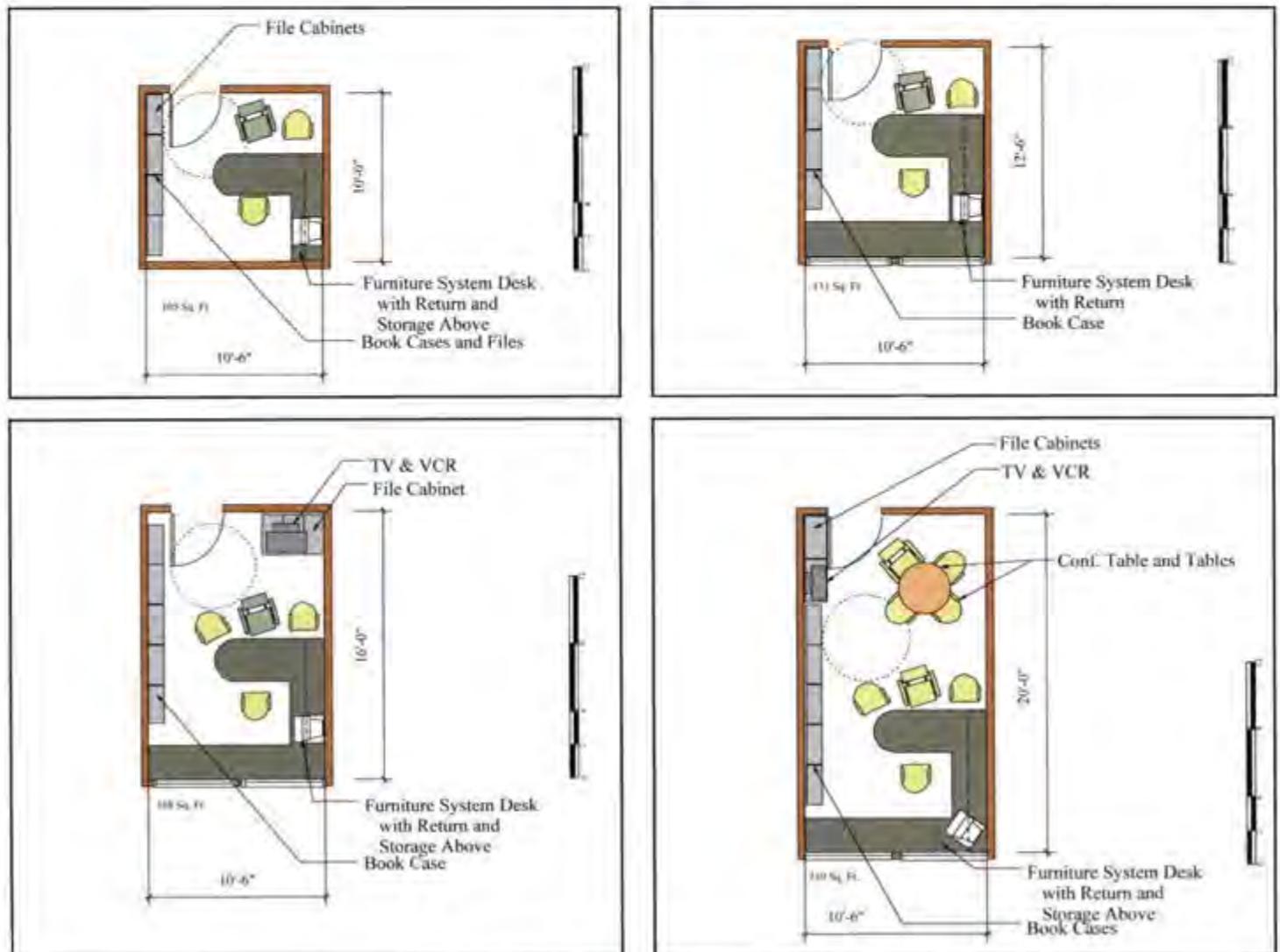
Office Related Service Space Uses

To understand the relationship among various office uses and develop a predictive space forecasting tool showing the

relationship between office use and office support needs, I computed the following ratios based on data available from our work. As indicated in Table 4, and using the NCES Room Type Codes, there was 135-square feet of office service space for every 1,000-square feet of office space among the public universities and 166 sq ft of office service space among the privates.

In other words, if one could determine the amount of space needed to provide work space for faculty and staff, the amount of additional office service space, on average, would be the range of 14 to 17 percent of office space. In a recent facility program, which included 125 individual faculty offices, the ratio of office service space to office space was 16.8 percent. Measures of this sort are helpful to gauge requests for service space as a proportion of office space, and are useful in forecasting space needs.

Exhibit 2
Office Furniture Layouts



Drawings: Source: Ira Fink and Associates, Inc. University Planning Consultants

Table 4

Office Service and Conference Room Needs, Per 1,000 ASF of Offices at Five Public and Two Private Universities

OFFICE SERVICE AREA, 135 TO 166 ASF PER 1,000 ASF OF OFFICE SPACE

CONFERENCE ROOM AREA, 43 TO 73 ASF PER 1,000 ASF OF OFFICE SPACE

Source: Ira Fink and Associates, Inc.

Conference Rooms

Conference rooms are an integral part of office space use and are important for many reasons. Conference rooms serve as a shared place for meetings and presentations, and also function as backup seminar rooms, places for socialization, large workrooms and departmental libraries. They are also a space resource that is available for conversion to other office type uses when space needs are great and space availability is low.

Determining space needs and space requirements for individual conference rooms is not as straightforward as determining office needs. For example, the Council of Educational Facility Planners (CEFPI) suggests campuses provide 40 to 60 asf of conference room space per headcount staff who are classified as executive/administrative.⁶ The CEFPI

guidelines do not provide similar guidance for other employee classifications.

The CEFPI does suggest when a departmental staff ranges from 6 to 15 FTEs, that 150 to 200 asf of conference room space should be provided. If the department or unit has 16 to 25 FTEs, CEFPI suggests a provision of 50 to 60 asf per FTE staff. As the following example illustrates, however, the latter guideline overstates the need, and the former guideline likely understates conference room need. For example, at 15 FTEs, a college or university department would plan for 150- to 200- square feet of conference area; this room size could seat about eight persons. At 16 FTEs, the CEFPI guidelines would suggest a campus department plan for 800- to 960-square

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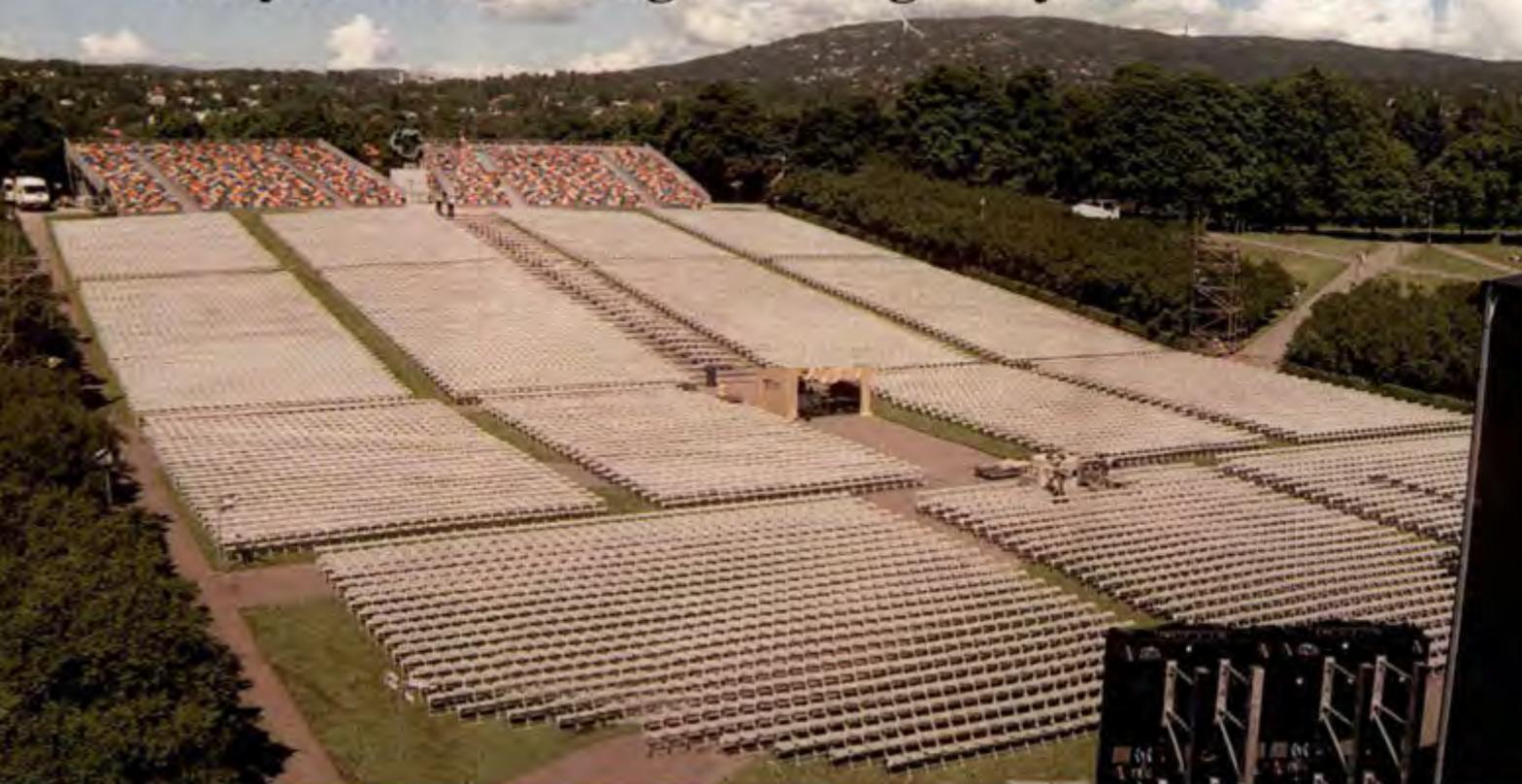
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Determining space needs and space requirements for individual conference rooms is not as straightforward as determining office needs.

Continued from page 28

feet, or enough conference space to accommodate 35 to 40 persons.

Predicting Conference Room Need

As a further test to develop a predictive tool for conference rooms, I calculated the number of conference rooms in our university room databases. I found one conference room for every 29 offices among the public universities and one conference room for every 33 offices among the private universities.

Planning for Conference Rooms

As a baseline planning guideline, include at least one dedicated conference room for each identifiable organizational unit or academic department when programming new or renovated facilities. Size the conference rooms to be proportional to the number of individuals in the department or unit. And identify each conference room as having significant audiovisual equipment and data capability.

Food, an integral part of many meetings and working lunches, needs to be accommodated in space planning. As a consequence, include counter space to accommodate a sink, microwave, and under-counter refrigerator in all conference rooms with a capacity of ten or more persons. When the conference room exceeds a capacity of 20 persons, include a small kitchenette or pantry adjacent to the conference room.

Redefining the NECs Codes for Offices

As noted at the beginning of this article, the NCES Room Type Codes provide a starting point for defining office space. In developing room databases, space management programs, and predictive measures for space for universities, we found a need to expand the NCES room type coding structure. A more defined room database allows easier and more specific identification of office space by type of user and by specific types of office service and support rooms. *[Ed Note: The Facilities Inventory & Classification Manual, from which the NCES room codes are taken, is in the process of being revised and will be published later in 2005.]*

Augmented Office Room Types

Table 5 shows a revised list of office room type codes for office uses within the NCES 300 to 399 room use code structure. This more detailed definition of room types allows you to sort a university room database and identify different types of office uses, including a variety of office occupants. For example, you can easily identify the number of faculty offices

in a department, a college, or a university. A comparison of faculty headcount to the number of faculty offices provides a quick method for determining space deficiency or space excess.

This augmented office room type classification allows campuses to understand better the relationships between the various types of office uses and to pinpoint differences in office space allocation among academic department, administrative, and service units.

This expanded system of room type codes also serves as a checklist of needed rooms when programming new facilities, and when analyzing an existing facilities database to determine the distribution of offices, office service, and office support.

Office Suite Circulation

In order to function properly, an internal circulation space or connecting area is needed in a suite of offices or among a series of work stations. The modified room type code system accounts for these spaces by including Room Type Code 340, Department/Suite Circulation. This office suite circulation space is part of the assignable area of the suite.

In programming new or renovated facilities, provide an allowance for suite circulation equal to 18 to 20 percent of the total suite area devoted to office uses. For example, if you program an office suite that included six offices of 140 asf each, and also included a secretarial or reception area of 160 asf, for a total suite area of 1,000 asf, add to this a suite circulation factor of 20 percent or 200 additional asf to provide space for the internal corridor to connect the offices and reception area. Thus your program would show a total office suite area of 1,200 asf.

Office Space Management

In comparison to centralized management of some types of space on campus, for example, registrar-controlled classroom space, the management of office space is primarily a decentralized activity. While the university or the state is the owner of the space, deans, directors, and department chairs are the primary managers of office space assigned to their activity. They make specific office space assignments, move individuals into and out of office space, and, within university procedures, take the initiative in reconfiguring office space to match their needs.

The exception to this decentralized approach occurs when the unit or department is out of space. The lack of contiguous space leads first to the conversion of spaces not thought of as office space, into offices, followed by the subdivision of exist-

Table 5
Modified Room Use Type Codes 300 to 399,
Office Facilities

Room Code	Type of Space
310	Office - Executive
311	Office - Professional and Administrative Staff
312	Office - Faculty
313	Office - Adjunct Faculty
314	Office - Graduate Students
315	Office Service - Copier/Fax/Supplies
316	Office Service - Storage
317	Office - Research/Non-Faculty
318	Office - Emeritus Faculty
319	Office - Post Doc Fellow
320	Office - Other
321	Office - Waiting/Reception
323	Office - Student Organization
329	Office - Pantry/Kitchenette
330	Office - Lounge/Lunch Room
331	File Room
332	Work Room
333	Mail Room
334	Vault
335	Office - Lounge/Lunch Service
339	Restroom (Private)
340	Department/Suite Circulation
350	Conference Room Office Related
355	Conference Room Office Service Related
356	Video Conferencing Room
357	Video Conferencing Room Service
358	Office - Library/Reference Room

Source: Ira Fink and Associates, Inc.

ing larger spaces into smaller spaces. When these approaches no longer work, the unit or department looks beyond its boundaries to provide office (or other) space. If the space issue becomes severe enough, entire units can be relocated, or additional space developed through new construction or renovation. Whether it is for a new hire, a visiting faculty member, or more graduate students, each of these space needs trigger a request to the next higher administrative level.

Policies on Office Use

Policies are a mechanism for recording and perpetuating the operating practices of an organization. Policies on office use can be classified in three broad categories: who is assigned offices, including offices for part-time use; how can the

assigned office be used; and how large are these spaces. In other words entitlement, decoration, and size.

Entitlement—Who Gets Offices

Surprisingly few universities have policies on allocating offices. And, for the most part, institutions with policies have guidelines only for faculty offices, not for staff.

Pfeiffer University in North Carolina has a typical policy on faculty offices. Their policy states that faculty require office space for study, class preparation, advising of students, and other activities related to their professional responsibilities. The policy further states it is the university's goal to provide private offices, whenever possible, for all full-time teaching faculty, and these offices should be as attractive and comfortable as the institution can make them. Pfeiffer University faculty are assigned offices as convenient to their colleagues and teaching classrooms as is practical.⁷

It is the policy of Middle Tennessee State University (MTSU) that full-time faculty receive an individual office. A special effort is made to place newly hired full-time tenure track faculty close to the departmental office to provide opportunities for interaction during the tenure process. Close interaction with the department is essential in the university retaining these new faculty.⁸

Pfeiffer's policies describe the use of the office and the need for comfort. MTSU's policy explains the importance of the office in assisting new faculty in getting started and being part of their departmental structure.

Other campuses use policy statements in recognition of one's office becoming personal space and how the physical characteristics of an office can have a bearing on one's sense of well being and accomplishments.

Decoration

Offices can be a reflection of one's self. They can be neat and tidy, or otherwise. It is the policy of Fort Hays State University in Kansas that faculty members may decorate, equip, and use offices as they see fit. This latitude is limited, however, to use that is consistent with physical plant policy and appropriate taste. At the same time, the university reserves the right to require individual faculty members to remove items from their offices for health and safety reasons and to enter the faculty office.⁹

The office can also be a special workplace if sufficient space is provided to house one's library. For example, at the Princeton Theological Seminary (PTS) in New Jersey, many offices are large enough to provide space for a faculty to maintain a 1,500-volume library. The importance of these offices at PTS, some of which are 250-square feet or more in size, is also reflected in their name—faculty studies.

Policies for Part-Time Use

Universities have a different set of office policies governing space for part-time employees, including adjunct faculty.

Offices can be a reflection of one's self. They can be neat and tidy, or otherwise. It is the policy of Fort Hays State University in Kansas that faculty members may decorate, equip, and use offices as they see fit.

graduate students, and emeritus faculty. These policies often are based on sharing office space.

Adjunct Faculty

While universities are generally committed to providing private office space for full-time academic staff, this typically does not apply to those who teach part-time. Some institutions provide access to shared offices for adjunct faculty or part-time academic staff to prepare for teaching and to meet with students.

At other universities, neither part-time nor adjunct faculty are provided office spaces. This in turn creates a need for these individuals, without university assistance, to find a place, often a near-to-campus coffee shop, where they can arrange to meet with students, or in effect have "office hours." With the increasing number of part-time faculty, providing a shared office space is now becoming an important component of academic space planning.

Graduate Students

University policies on providing office or desk space for graduate students vary widely. For students at the Ph.D. level, universities generally strive to provide individual study carrels or desk space, both as a place to store materials and as a location where students and faculty members can have easy access to one another. Facility programs today favor shared offices for Ph.D. students with three to an office, rather than large rooms with desks housing five to ten Ph.D. students.

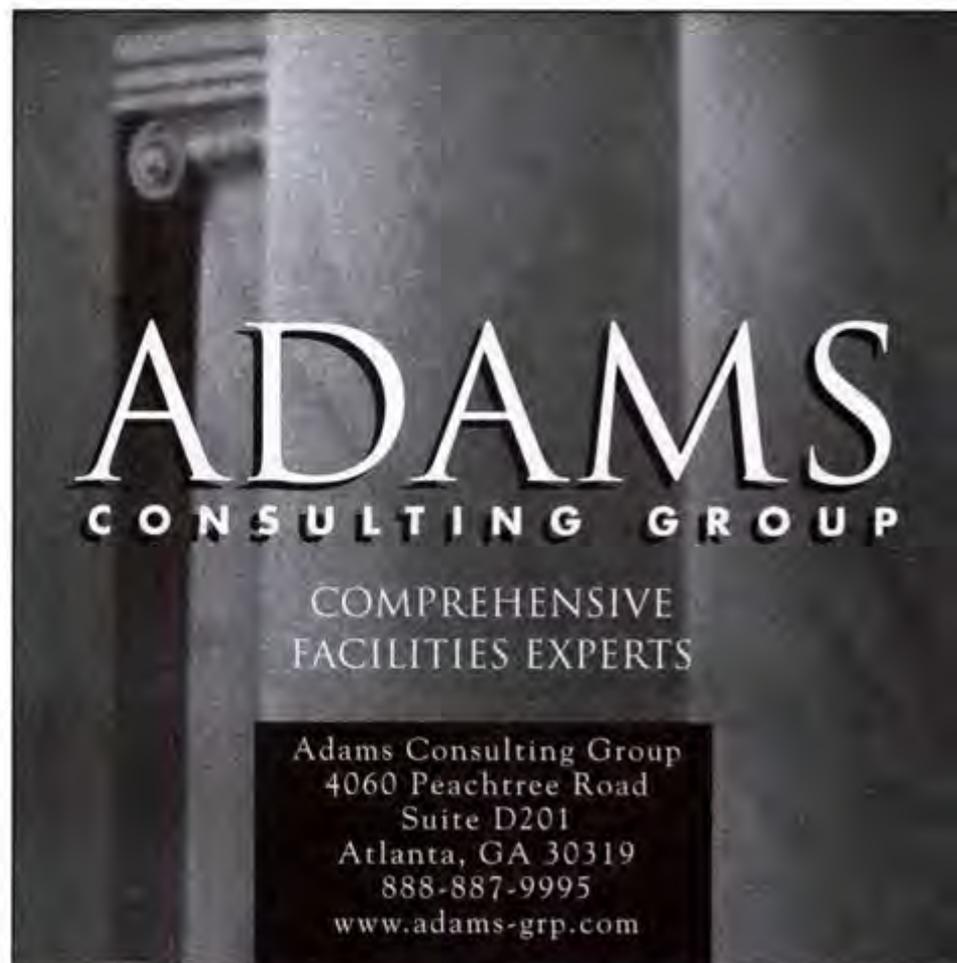
For students who are teaching assistants (TAs), universities often provide a common work room to provide shared space for the TA to have office hours. For those students who are research assistants (RAs) and likely to spend considerable time in the lab, the RA is also now receiving a shared office work space, with a dedicated desk or carrel. As a result of lab safety issues, RAs are being moved out of their laboratory desk space into office space in proximity to the laboratory.

Offices for Emeritus Faculty

Another important and thorny office space policy issue is office space for retired or emeritus faculty. Many university departments and emeritus faculty want to maintain their association with each other by continuing their pre-existing office assignment. However, institutions must also meet demands for scarce office space, which usually includes finding space for the person who is the successor to the professor who has just retired. To meet these demands, at campuses where there are policies on offices for emeritus faculty, they usually establish term limits, require office sharing, and define conditions that require vacating the office.

Term Limits

For example, at Wesleyan University in Connecticut, whenever possible, a retiring faculty member who requests to do so may have full use of his or her office for at least a further year beyond retirement.³⁰ At Georgetown University in Washington, D.C., retired faculty who continue active involvement



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in functions of their program or department may be provided a desk and research space. Upon retirement, Georgetown University faculty no longer have a claim to office space as is the right of full-time faculty.¹¹

At the University of California, Berkeley, it is expected that an emeritus professor should be offered continued use of his or her office for one year after retirement. Thereafter, those desiring campus office space are expected to move to a shared office. This assignment of space to emeritus professors is discretionary, with such assignments of space evaluated annually. The assignment of a private office to an emeritus professor after one year is considered an exception.¹²

Sabbaticals and Leaves

Another office policy issue concerns temporarily vacated offices. At campuses where office space is difficult to come by, policies have been established to reuse faculty offices during periods of sabbaticals or leaves. At Trent University in England, faculty on either half- or full-year sabbaticals are asked to remove their books and personal items and vacate their office. In some cases these materials are stored by the university.¹³

At the University of Ottawa in Ontario, when a faculty member is away for more than four months or more than 50 percent of the time, their office can be released and shared office space provided. When office space is released the university provides packing services upon request.¹⁴

Dual Offices

Traditionally, faculty offices are closely associated with their home department. Today, with an increasing interest in interdisciplinary research, campuses are faced with a need to provide office space for faculty both at their home department and also close to where their interdisciplinary research activities take place.

At Georgia Tech, where 10 percent of the research space is in interdisciplinary use, and at other research universities, faculty can have two offices. At some campuses, this dual office need is solved by providing a private office at one location and a shared or smaller office at the second location. The goal in each is to ensure student access to the faculty. At other campuses, such as Stanford University, the concept of dual offices is discouraged except under specific circumstances.¹⁵

Conclusions

From the data and policy statements presented above, there are four important conclusions about offices as a campus space use.

First, campuses need to develop and use their own set of guidelines regarding size of offices. Offices account for one-quarter of space on campus. Yet, most campuses do not have published office space guidelines. Without a set of office size policy guidelines, each new building or renovation will, during facility programming, raise again the question of office size.

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Without guidelines, universities can make inefficient choices about space allocation. In some cases, the effect becomes like a ratchet. The office size for the past project creates a baseline for increasing office size in the next project. In developing guidelines, campuses can illustrate typical office layouts as a method to maximize the use of space in the office and provide guidance to the building design team.

Second, campuses guidelines on office size must accommodate the needs of today's campus operations. This does not mean that offices should be oversized, but rather the size of the office has to accommodate technology needs and recognize the importance of the office both to the individual and the institution. Offices today require more surface area for desktop information technology, computing, and communication equipment. The desk space required to be set aside to accommodate a computer, fax, scanner, and printer has reduced the remaining desktop surface area available for other work purposes. At the same time, these pieces of equipment allow each faculty and staff employee to work more efficiently and become more productive.

Third, office policy guidelines must recognize the need for meeting and conference room spaces. Meetings and presentations are an integral part of campus life and collegial decision making. Some meeting space related needs are incorporated in the size of the office, depending on the rank of the office occupant in the university hierarchy. For others, without conference or meeting areas built into their office, shared conference room space is needed and should be defined. Likewise, informal meeting areas, such as break rooms or kitchenettes, are now part of the office environment. Office policy guidelines will be most effective if they jointly address space requirements for offices, conference rooms, and informal meeting areas.

Lastly, campuses should develop policies on office space entitlement and decoration. Policies define intent. Because policies provide for continuity in organizational decision making and practice, they serve as a method for communicating expectations of institutional behavior regarding office assignment. In many areas of office space assignment, including offices for emeritus faculty or the allocation of two offices, the ability to rely on a policy for direction will enable the unit to plan ahead, reduce the opportunity for misunderstanding, and meet both individual and organizational needs. 🏠

1. See Ira Fink, "Classroom Use and Utilization" *Facilities Manager*, Vol. 18, No. 3 (May/June 2002), pp. 13-24; Ira Fink, "Class Laboratories: Space Use and Utilization," *Facilities Manager*, Vol. 19, No. 6 (November/December 2003), pp. 17-27; and, Ira Fink, "Research Space: Who Needs It, Who Gets It, Who Pays for It," *Planning for Higher Education*, Vol. 33, No. 1 (September-November 2004), pp. 5-17.
2. Raymond, Santa and Roger Cunliffe. *Tomorrow's Office*. London: E & F Spon, 1997. p. 60.
3. *Room Use Codes and Definitions (Effective Fall 2003)*. Riverside, California: University of California, Riverside, 2003. pp. 18 and 19.
4. National Center for Education Statistics. *Postsecondary Education Facilities Inventory and Classification Manual*. Washington, D.C.: U. S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, 1992.
5. <http://www.missouri.edu/~umospace/studies/off-ss.pdf>
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7. <http://www2.pfeiffer.edu/~academics/Faculty%20Handbook%20pdf/Section%2035%20Faculty%20Policies%20and%20Responsibilities.pdf>, p. 1
8. <http://www.mtsu.edu/~pvpaa/space.htm>
9. http://www.fhsu.edu/policies/directory/faculty_office_space.html
10. http://www.wesleyan.edu/acal/Offices_Labs_Retired_Faculty.hu
11. <http://www.georgetown.edu/facilities/architect/policysum.htm>
12. <http://smcp.vcbf.berkeley.edu/policies/emeriti.htm>
13. <http://www.trentu.ca/deansoffice/space.html>
14. <http://www.uottawa.ca/sec-univ/eng/reg95-a.html>
15. http://cpm.stanford.edu/DCP_ArtSpaceGuidelines.pdf, p. 12

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THE Non- Architect's GUIDE TO THE DESIGN PROCESS

by Phillip S. Waite

After you have completed the pre-design phase of any new construction process, you will need to select a consultant to assist you through the design process. The first step in securing design services is usually issuing a Request for Proposal, or RFP. The other option is to issue an RFQ or Request for Qualifications. Though they are technically different, most institutions and design firms treat them the same. The consultant's response to an RFP or RFQ is called an SOQ (Statement of Qualifications) or simply the

*This article is excerpted from a new book, **The Non-Architect's Guide to Major Capital Projects: Planning, Designing, and Delivering New Buildings**, and is reprinted with permission by its publisher, the Society for College and University Planning. Author Phillip Waite is assistant professor of horticulture and landscape architecture at Washington State University, Pullman, Washington, and is a member of SCUP's Sustainability Advice & Review Panel; he can be reached at pswaite@wsu.edu. This is his first article for Facilities Manager.*

"Proposal." Most states regulate what must be included in RFPs published by state agencies and institutions. Private institutions don't have the same requirements, but the following information is useful for both. A good RFP will include the following elements:

- Institutional and Project Background
- Project Scope Description
- Minimum Qualifications of Consultants
- Fee Basis
- Project Schedule
- Proposal Evaluation

Background

Include background information on the institution and a brief background of the project in your RFP. This can be as little as a paragraph. The background of the institution is usually boilerplate, provided by the institution and the same in every RFP. The background of the project should include the building type (classroom building, dormitory, laboratory, or office building) and where the money is coming from (state funds, federal funds, private donations, bond-generated revenue, or a combination of the above). Remember, where a project's funding originates often defines, or at least influences, how it is delivered. If it is known, what you think the project budget amount may be should also be included.

Scope Description

This is a description of what type or kind of facility it is, and its size and "flavor," if you know it. This can include information like the targeted gross square feet, style of architecture, building type, and any applicable institutional design guidelines and standards.

Minimum Qualifications

What are the minimum qualifications that you want the consultants to have? Do you want them to have had project experience with this specific building type? Do you want them to have done at least five projects of this kind? Do you want the team to include not just engineers but also landscape architects, interior designers, and an audiovisual consultant? Shall the consultant team be led by an architect? Or shall a landscape architect or urban planner lead the team? If it's a laboratory facility, will a lab planning specialist lead the team? Will the successful candidate be a local or in-state architect, or can an out-of-state architect submit an SOQ?

Fee Basis

Is the institution going to propose paying a percentage of construction or a stipulated fee? Let them know up front how you plan to do business. Consultant selection should never be based on a proposed or potential fee, but rather on the basis of the consultant's qualifications. Fees are dynamic and can be negotiated; qualifications are fairly constant. I have spoken with many architects about this and they all agree. Leslie Loudon, project manager for Little Diversified Architectural Consulting, headquartered in Charlotte, North Carolina, said it best: "Firms selected for their low fees often have to take a

less 'hands-on' approach to serving their clients and are much more likely to need to charge additional service fees for small changes during the design process. This can bog down the design schedule and cost the client more money in the end."

Schedule

What is the timeline, not just for when the proposal is due, but for the evaluation of the proposals, the interviews, the design process, and construction of the project? Are there "drop-dead" dates that the consultant should know about up front? For instance, if the project is financed by bond revenues, what is the date by which all funds must be expended before arbitrage begins? If the funds are from a grant, is there a date at which all funds have to be committed or expended? Does the construction have to be completed before the start of a particular academic term?

Proposal Evaluation

It is only fair to the consultants submitting on the project (and in some states it's required by law) to let them know how you are planning to evaluate their proposals. In many cases, proposal evaluation looks to consultants like "black-box decision-making"—the proposal disappears into the institutional black box and what goes on in there is hidden until someone emerges with a decision.

One simple way to make the evaluation process faster and easier is to limit the number of pages in the consultant proposal. This forces the consultants to really think through what should be in their proposals. You should also let the consultant know what counts against the page limit and what doesn't. Résumés should not be counted against the word or page limit, but included in an appendix to the proposal. I would also suggest that reference letters be included in the proposal but not counted against the page limit.

Other Considerations

There are a variety of ways to solicit proposals:

- You can advertise in local newspapers, trade journals, and periodicals.
- You can send general announcements to your state or regional American Institute of Architects (AIA) membership.
- You can send targeted solicitations to just a few firms. Most public institutions would be unable to do this unless the firms had been pre-qualified. One difficulty in sending targeted solicitations is deciding how many firms to solicit. You want to send enough to generate responses, but not so many as to overwhelm the process.

Selecting A Consultant

What to Look For in a Consultant

One of your most important decisions will be what kind of firm you want to design your project. Do you want a "starchitect" (an architectural "star")? Do you want a smaller local firm or a large national one? There are distinct advantages and disadvantages to each of these options.

Large firms have the wider technical and support resources. Although they may have fewer resources, small firms and sole proprietors tend to be "hungrier" and generally provide more of themselves and their talents to the client. Lynette Jones, a senior facilities planner at West Virginia University, suggests that what matters isn't so much the size of the firm as its location. She says it "works best if the architect is located within a two-hour drive of campus." This proximity enhances communication. Although you'll pay more for a large firm coming from a greater distance, that doesn't necessarily guarantee that the local firm is a "deal," either.

My personal preference is for small, hungry firms with design talent. I would rather ratchet back a talented designer than try to goad a mediocre one to excellence. To quote the Roman orator Quintilian, "Exuberance is easily corrected; dullness is incurable." What's more, I would rather pay for and get a small firm's first string than pay a large firm's first-string prices and get their second-string talent, or sometimes even their third string.

One simple way to make the evaluation process faster and easier is to limit the number of pages in the consultant proposal. This forces the consultants to really think through what should be in their proposals.

If your project is, for instance, a student recreation center, you would obviously look for a firm that has experience with recreation centers, but maybe not a firm that's done 25 of them. If you select a firm that's never done your building type, you will pay for their learning curve. But if they've done 25 buildings similar to yours, you risk getting an architect who's bored with the building type and delivers a "rubber stamp" project. In my opinion, the ideal firm is one that is well along the learning curve, but not over it yet.

The Consultant's Viewpoint

Consider these points:

- When they call you or visit you, they are always looking for work, always "on," always marketing. Don't be offended by that. They're trying to put food on the table, just like you.
- They're looking for as much information as they can get to prepare their proposal and/or for an interview. If you give information to one potential proposer, you must give it to all proposers. The Golden Rule applies in this situation: be fair to all. The best policy is to not give out any information beyond that already specified in the RFP. However, talented architects ask better questions and will look for information that was, perhaps inadvertently, left out of the RFP.
- The fairest solution is to have what is called a "pre-proposal conference," to which all potential proposers are

invited. At that time, the institution or agency can make a thorough presentation about the project and answer all questions. Everyone in attendance gets to hear the same information. Just make sure that the pre-proposal conference is held at least three weeks in advance of the RFP due date so that information learned in the conference can be reflected in the SOQ. An alternative to the pre-proposal conference, or in conjunction with it, is to make the RFP and addenda available as a PDF on your website. This option gives all consultants the same access to pertinent information, even if they can't attend the pre-proposal conference.

- Architects and designers will pursue every project they have a reasonable chance to get, but it isn't cheap to prepare proposals. Don't ask for material that you're not going to read or review. All too often, consultants prepare proposals that cost thousands of dollars but go unread and unreviewed, because the selection process had a foregone conclusion.

Shortlisting Firms

After reviewing and evaluating proposals, it is customary to create a "shortlist" of firms to interview for the work. You should be convinced that any firm on the shortlist would be able to accomplish your project. How many firms should be shortlisted? Most consultants will tell you the fewer the better; every consultant I surveyed suggested a shortlist of no

more than four firms. I've seen shortlists that had as many as eight firms.

My preference is for a shortlist of three to five: the smaller the project, the shorter the shortlist. The interview process isn't cheap for either the consultant or the institutional members of the selection committee. Many firms will invest tens of thousands of dollars to prepare for an interview. If they really don't have a chance, don't shortlist them.

Another step that should be accomplished prior to completing a shortlist is the checking of references. Doing this after the interviews is a mistake. Checking references can help you create the shortlist. This important step is too often neglected altogether.

Interviews

All firms that submitted proposals should be notified of who made the shortlist. The firms on the shortlist should be notified of the time and place for interviews. Give them a minimum of three weeks' lead-time so they can make travel arrangements, if necessary, and prepare materials, which may include reports, drawings, models, and/or computer presentations.

Several considerations should be taken into account in establishing the time and place for the interview:

- Every member of the selection committee should be in attendance at every interview. It isn't fair to the consultants and it skews the results if any selection committee members are absent. Any committee member who can't make it to every interview should excuse himself or herself from the process.
- If possible, hold all interviews in the same room. This levels the playing field and eliminates the risk that the environment might unduly influence the selection committee or give one team an unfair advantage.
- If possible, hold all interviews on the same day, or at least within a two-day period. This allows the selection committee to compare presentations that are fresh in their minds.
- Establishing interview order is a thankless job. Most firms want to go either first or last. No one wants to be buried in the middle. One reasonable way to establish interview order is to allow the firm that is traveling the farthest to choose the time that will work best with its travel needs. A truly fair method for scheduling the order is with a random drawing of firm names from a coffee cup.



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Just remember that however the interview order is established, someone will be displeased.

- Make sure that the interview room is large enough for the firms to set up display boards, and that all selection committee members have clear sight lines to the presentations. Most firms will appreciate the opportunity to see the room prior to the interview in order to better plan their presentation.
- Some firms will make their entire presentation with audiovisual equipment—laptop computers and projectors, or even slide projectors. This means the room should have, or have access to, a screen or other audiovisual equipment. If the room has windows, they should have the capability of being darkened.
- Most firms will appreciate the opportunity to rearrange the room for their presentation. If you allow one firm that opportunity, allow all firms to do it. Simply provide sufficient time between interviews for the room to be set up and tell the consultants how much time they will have. John White, director of capital planning at the University of California, Merced, suggests keeping the consultants separated so they don't run into each other, thus avoiding potential awkwardness.
- Provide refreshments for the selection committee and the interviewees. Sometimes firms bring refreshments with them in an effort to influence the process. If the institution or agency conducting the interviews provides the refreshments, it obviates any advantage sought by the firms.
- Handle campus logistics for the consultant teams. Even for a consultant team familiar with your campus, providing a map of the campus, directions for parking and finding the interview room, and a visitor's parking pass well in advance of the visit is extremely helpful. (Think about it: you would do the same for a person you were interviewing for a staff position in your department. In this case, you're interviewing someone for a "temporary" position with your institution—so be nice to them.)

I'm a firm believer in interviews, and the longer the better; I like two-hour interviews. (Long interviews are another justification for smaller shortlists.) The reason for long interviews is that you're going to be working with these consultants for at least three to four years, and much longer with some projects. The interview is your chance to see what kind of chemistry your team will have with their team. Let the consultants have plenty of time to make their presentation, and reserve plenty of time for questions and answers.

Watch group dynamics before and after the interview. Do their team members relate well with each other? Does the consultant team interact well with your team? One informal way to measure interaction chemistry is what I call the "humor index." I have participated in dozens of interviews and often would count the number of times a firm would make jokes during the presentation. Sometimes the jokes were at their expense, sometimes at the institution's expense. I found that the firm that made us laugh the most won the job 98 percent of the time. While not a scientific or unbiased study, it does illustrate that humor is a measure of the firm's communication skills, relational skills, and general amiability.

Consider options other than a traditional interview, such as conducting the interview in the consultant's office, touring some of their completed facilities, and interviewing their previous clients. Bruce Blackmer, CEO of Northwest Architectural Company, with offices in Spokane and Seattle, Washington, offers this wisdom on the subject of interviews:

Once firm credentials and capabilities have been reviewed and a shortlist of qualified firms established, the 'people fit' becomes the most important consideration. A short interview is the typical mode of making a selection, but it is very difficult to truly evaluate the likelihood of a long, successful relationship in the 30- to 60-minute interview held by most institutions. A successful method has been to visit the architects' office

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and tour one or more of their relevant projects with the architect and preferably the owner present. You are establishing a partnership . . . don't shortchange yourself of a thorough evaluation. Allow adequate time for questions, answers, and discussion during the interview. Remember you are evaluating the potentials of a relationship, so tailor the interview to seek out how that relationship will work, not just to have a 'dog & pony' show.

Recognize that an interview is an 'artificial situation' created in an attempt to predict future performance. The skill set primarily needed for future project success has little in common with the 'theater arts' that have become so typical in many interviews. Don't be afraid to limit the formal aspects of the interview in particular and look for ways in which you can really get to know the team.

Post-Interview Debriefing

Once the selection committee has completed its deliberations and a winning team has been selected, it is usually appropriate to notify institutional leadership of the decision before notifying the teams. All teams, not just the winners, should be notified of the outcome. While it's always fun to call the winning team, notifying the losers can be awkward.

Sometimes it's done with a call, often with a letter. Some institutions never notify the losing teams; the absence of the "winning" call is the de facto notification. I find that rude and unprofessional. If you thought enough of the team's qualifications to shortlist them and interview them, they likewise deserve the consideration of a phone call notifying them of the outcome of the interviews.

The firms that aren't successful in the interview process often will seek a debriefing to ascertain why they weren't selected. Losing a job is a painful experience, but seeking to learn from the failure is an admirable and necessary aspect of both personal and professional growth. Sometimes state or institutional regulations prohibit post-interview debriefings, but if it is allowed and you do choose to do it, there are several points to keep in mind:

- Be aware of potential legal pitfalls. Even if the debriefing process is allowed, make sure your legal counsel is aware that you're going to do it and find out what guidelines they have for you.
- Be as honest as you can. Sugarcoating issues won't help the team on their next interview.
- Be aware that even though it can be painful for everyone involved, most consultants would rather go through a negative debriefing than continue to lose jobs.

Negotiating Contracts

In addition to the call that notifies the winning team, an official letter of notification is sent as well, outlining the next steps. The first "next step" is to define the scope of work and negotiate the contract. This will take longer than you think. Don't scrimp on consultant compensation—you get what you pay for. As mentioned previously, some states prescribe the amount of compensation allowed. Remember, too, that the AIA's contract formulas define "basic services" as well as "special" or "additional" services. Be sure that all the services you need, basic or special, are included in the contract.

For instance, creating artist's renderings or models of the proposed facility for use in marketing and fundraising is not a basic service. If you determine that these are needed, include them in the contract negotiation as a special service. Always engage qualified institutional legal representation when negotiating and signing any contract. 🏢



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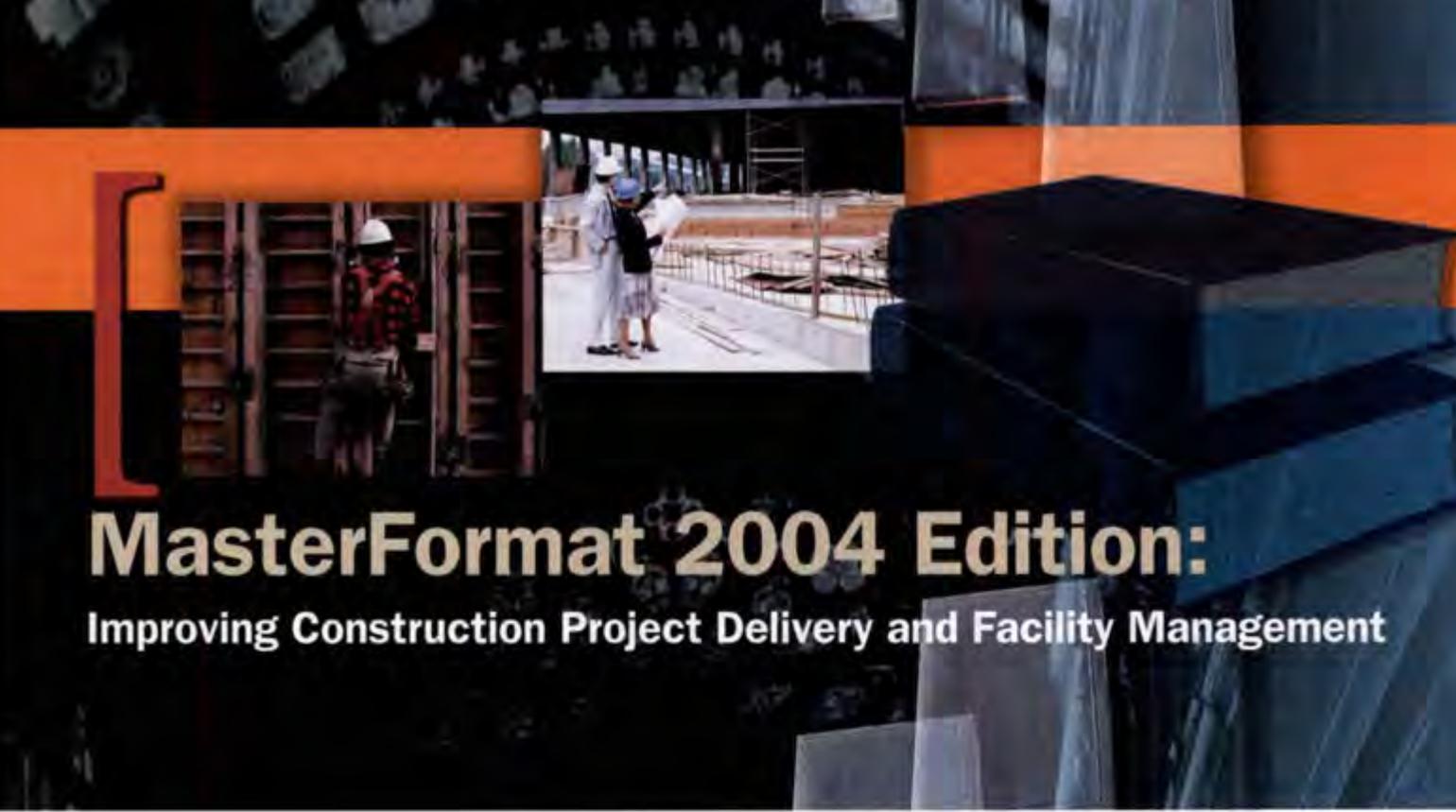
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MasterFormat 2004 Edition:

Improving Construction Project Delivery and Facility Management

by Dan R. Merriman, APR

Project delivery and facility management have taken a major step forward with the recent release of *MasterFormat™ 2004 Edition*. This new version of commercial construction's predominant organizational standard for project information is designed to reduce changes and delays—in construction and in facility maintenance and operations—caused by incomplete, misplaced, or missing data. How? By undergoing the biggest expansion in the product's 40-year history. The expansion fosters more comprehensive and detailed specifications. And of particular importance to building owners and facility managers, the new edition addresses all phases of the project life cycle, not just construction.

Used in the United States and Canada for more than 70 percent of commercial and institutional construction projects, *MasterFormat* is a master list of number and titles for organizing specifications, contracting and procurement requirements, and other data. As the industry's "Dewey Decimal System," *MasterFormat* standardizes communication of information critical to engineers, architects, specifiers, contractors, and suppliers in meeting owners' requirements, schedules, and budgets.

Dan Merriman is communications manager for the Construction Specifications Institute, Alexandria, Virginia. He can be reached at dmerriman@csinet.org; this is his first article for Facilities Manager. CSI is a strategic alliance partner of APPA.

Industry: *MasterFormat* Had to Expand

MasterFormat organizes project data into "divisions," and each division is made up of many section numbers and titles, which are the building blocks of any project manual. Since the early 1960s, *MasterFormat* has had 16 divisions. But while *MasterFormat 2004 Edition* was being developed construction practitioners and organizations made it clear that the 16-division structure couldn't handle the rapidly increasing volume and complexity of project data. Causing the overcrowding were many recent advances in building products and technologies, chiefly brought on by increased use of computers for managing facility systems. New priorities for buildings also added to the problem. For example, security and life safety, especially post-September 11, impact projects as never before. Green building, rarely mentioned 40 years ago, is now a major concern and interest. So are integrated systems for operating and maintaining facilities.

Also, *MasterFormat's* traditional five-digit section numbers didn't provide for enough "slots" in many divisions. That forced earlier editions to make compromises in classifying information. For example, items like cathodic protection, lightning protection, fire suppression, detection and alarm, and solar and wind energy equipment were put in Division 13 (Special Construction) instead of Division 15 (Mechanical) or Division 16 (Electrical) because Division 13 had room. And to address areas that *MasterFormat* didn't cover, or covered inadequately, non-standard section numbers and divisions

began to appear. Officially, they don't exist, but many "Division 17s" were created across the industry, for everything from telecommunications to railway track work to signaling.

Such Band-Aid approaches resulted in misplaced or missing information, leading to errors, omissions, and rework that cost time and money. What had been intended as an information management standard was becoming less useful for that purpose.

How MasterFormat Has Improved

Based on unprecedented industry input throughout its development, the philosophy of *MasterFormat 2004 Edition* is to provide an organizational structure that:

- 1) Systematically encompasses all data generated, throughout their life cycle, for today's projects.
- 2) Assimilates growth, in volume and complexity, of project information.
- 3) Provides more space and detail for mechanical and electrical disciplines.
- 4) Addresses the needs of horizontal construction (roads, bridges, dams, rail, and utilities) as well as vertical.
- 5) Covers process engineering subjects, which previous editions largely ignored.
- 6) Maintains organizational consistency.
- 7) Follows recognized information classification principles.

That philosophy is reflected in *MasterFormat 2004 Edition's* new features, which include the following sections.

General

- An increase to 50 divisions (numbered 00-49) from 16.
- The contents of Divisions 03 to 14 remain much the same as in *MasterFormat 1995*.
- Divisions 01-49 are in five subgroups:
 - General Requirements Subgroup (Division 01)
 - Facility Construction Subgroup (Divisions 02-19)
 - Facility Services Subgroup (Divisions 20-29)
 - Site and Infrastructure Subgroup (Divisions 30-39)
 - Process Equipment Subgroup (Divisions 40-49)
- Some division numbers are reserved for project information to be generated by future products, technologies, and methods.
- The new paired, six-digit section numbering system expands by more than a hundredfold the number of level-three sections in each division.

Facility Services Subgroup (Divisions 20-29)

- The 1995 *MasterFormat's* Division 15 (Mechanical) has been replaced by divisions providing expanded coverage for:
 - Fire Suppression (Division 21)
 - Plumbing (Division 22)
 - Heating, Ventilating, and Air Conditioning (Division 23)
- The old Division 16 (Electrical) is expanded through the creation of these divisions:
 - Integrated Automation (Division 25)



- Electrical (Division 26)
- Communications (Division 27)
- Electronic Safety and Security (Division 28)

Site and Infrastructure Subgroup (Divisions 31-35)

This subgroup expands *MasterFormat* to cover site and heavy civil projects, including transportation, utility, and marine construction.

Process Equipment Subgroup (Divisions 40-48)

The last subgroup expands *MasterFormat* to address manufacturing, water and wastewater treatment, power generation, and other types of process engineering projects.

How MasterFormat 2004 Edition Can Benefit Educational Facility Managers

If you manage information well, you manage costs well, and *MasterFormat 2004 Edition* can help maximize information management for facility managers. That's because the new edition expands the cataloging system for organizing design and construction information to cover the entire facility life cycle. Every division in *MasterFormat 2004 Edition* has numbers and titles for locating information on commissioning and decommissioning building elements. Take, for example, elevator repair or replacement. Detailed specifications for decertifying, removing, and replacing elevators can be written and be on file in a location common to everyone who might be involved, no matter when such operations might occur during the structure's life cycle. That's a major improvement over having to rely on possibly incomplete information that may or may not have been supplied originally by product representatives or the designer.

MasterFormat 2004 Edition also has additional section numbers in each division for operations and maintenance

activities. The new edition can be used for developing specifications for such things as carpet cleaning, fire extinguishers' upkeep, and roof repair, and can even be used to specify maintenance required under warranty, saving time and money over the facility's life cycle.

Aiding the Transition to MasterFormat 2004 Edition

MasterFormat users have several options and tools available with the document for transitioning to the new edition. Included with *MasterFormat 2004 Edition* to aid the transition from a previous edition are:

- *The Transition Matrix* – An Excel® file on the CD included with the publication, it shows the new edition's equivalents to the 1995 and 1988 editions' numbers and titles.
- *The Keyword Index* – Lists terms and what section numbers are best.

Education on MasterFormat at the CSI Show & Convention

The 49th Annual CSI Show & Convention (April 20-23, Chicago) will conduct a variety of continuing education sessions on *MasterFormat 2004 Edition*. On Wednesday, April 20, there will be separate continuing education forums for users

from various design and construction disciplines, including one each for facility managers and owners. Each forum will address topics of specific concern as to how *MasterFormat 2004 Edition* will affect operations, features and benefits of particular interest, tactics for seamlessly switching to the new edition, and best practices for using the resource. Each forum will be presented by a member of either the MasterFormat Expansion Task Team, which developed the new edition, or the MasterFormat Implementation Task Team, which is leading CSI's program to aid the construction industry's transition to the new edition.

Also, the CSI Show & Convention's April 20 opening general session will feature a panel of prominent industry figures discussing issues about *MasterFormat 2004 Edition* that are of industry-wide interest. On Saturday, April 23, education sessions will address the new edition's application guide and keynoting with the new version.

Paid registrants attending the CSI Show & Convention's continuing education program receive on site a free copy of *MasterFormat™ 2004 Edition*, a \$159 value. For more information about the CSI Show & Convention or to register, go to www.thecsi.com.

Also in 2005, CSI will provide education at architecture, engineering, and construction (AEC) firms, corporations, government agencies, and other organizations. Updates on *MasterFormat 2004 Edition* education are at: www.csinet.org/masterformateducation.

Master Guide Spec Systems Converting

By year's end several master guide specifications systems will have revised their products to conform to *MasterFormat 2004 Edition*. They include:

- ARCOM's MasterSpec®
- Building Systems Design's BSD SpecLink® (a global switch rearranges specs per the 2004 or 1995 editions.)
- CSRF SpecText®
- Digicon Information Inc.
- Canada's National Master Guide Specifications.

What's Next?

The former system of publishing new editions of *MasterFormat* every five to seven years is out. Instead, CSI is developing a procedure for assigning new section and division numbers on a continuing basis to meet the industry's evolving needs.

For more information about *MasterFormat 2004 Edition*, visit www.csinet.org/masterformat or call CSI at 800-689-2900. 📞

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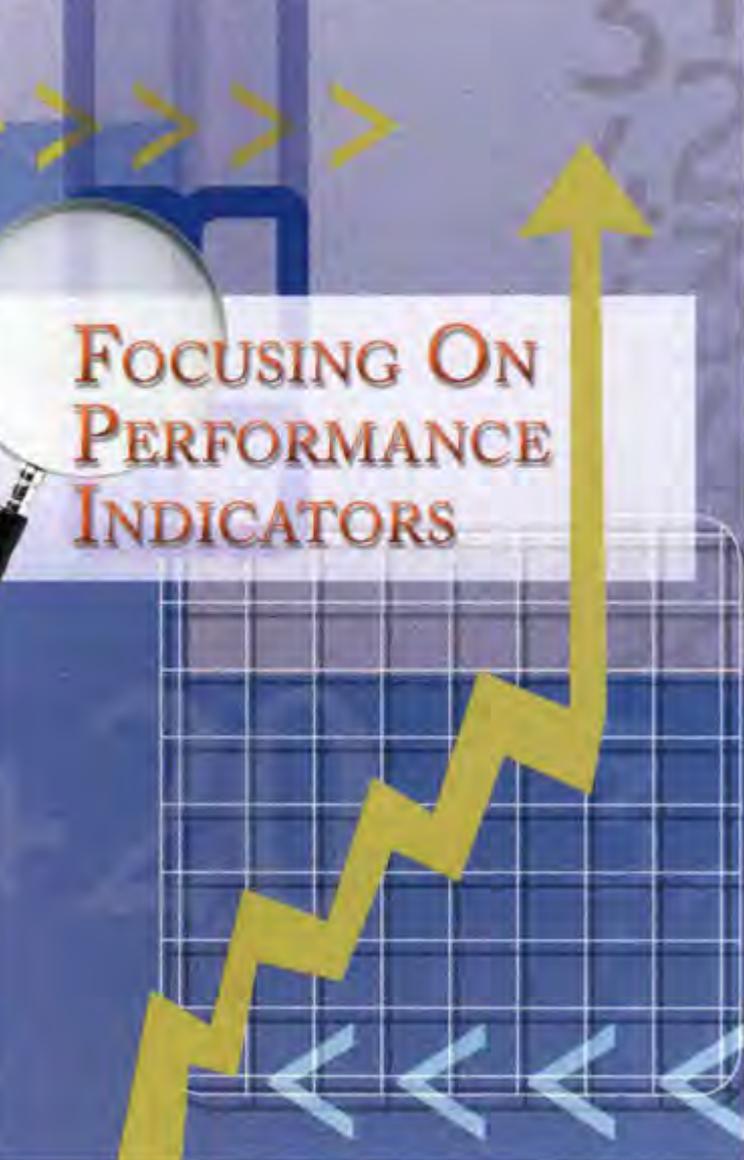
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FOCUSING ON PERFORMANCE INDICATORS

by James R. Barnett, Ed.D.

In the mid 1990s, New York City's new mayor determined that future crime statistics could be decreased by implementing a statistical analysis system whereby data would be gathered, evaluated, and changed as a result of what tendencies the data demonstrated. By continually evaluating what the data illustrated, predictions were made with police resources allocated to higher probability areas, thereby increasing the effectiveness of safety and security throughout the city. Originally begun within the police department, the system was implemented throughout service units by city leadership. The recent television series, *The District*, portraying a Washington, D.C. police department, used a similar data retrieval system for crime analysis.

Jim Barnett is associate vice president for facilities services at the University of West Florida, Pensacola, Florida; he can be reached at jbarnett@uwf.edu. This is his first article for Facilities Manager.

As we realize, most facilities organizations have used purchased or in-house computerized maintenance management software for many years to gather pertinent fiscal year-to-date information for organizational effectiveness and as a management analysis instrument with the goal of providing continual improvement. Logically, this information was meant to be used in a similar manner, as was New York City's computer statistics program. The data was gathered to understand what the data was illustrating rather than concentrating solely on the numbers. The facility leader's responsibility is to keep the leadership team and reporting staff focused on how adjustments can be made throughout the organization to improve organizational performance. Merely collecting data is the tip of the issue.

As facilities professionals and leaders within most state-supported institutions during continued resource-constrained times, we have an important responsibility to continually monitor strategic performance indicators throughout our organizations. This data can be compared to comparable peer or aspirant APPA benchmark institutions and NACUBO data survey information. APPA's Facilities Core Data Survey, conducted annually beginning this year, and the NACUBO data survey, performed every five years, provide various categories. From these categories, others can be identified by the institution to drill down further into the organization.

Each facilities leader, with their leadership team and staff participation, can identify four general tasks to utilize key performance indicators for their respective institution.

1. Collecting the right information. It is essential to identify key information relative to the problem or initiative prior to the beginning of a fiscal year to enable a full 12-month business cycle. This will provide appropriate personnel participation, establishment of report formats, and implementation of standard operating procedures. For greatest effectiveness, the institution should format the information to enable future peer institution-benchmarking capabilities for data surveys.

Examples for facility planning and construction might be:

- a) Number of estimates performed per quarter
- b) Estimate's versus actual costs accuracy comparison by percentage
- c) Monetary values of estimates in thousands per quarter
- d) Value of completed construction by in-house staff per quarter

Examples for facilities management could be:

- a) Quantity of corrective work orders per building and mechanical maintenance skilled trades FTEs completed at 15 calendar day intervals
- b) Quantity of corrective backlogged work orders aged beyond 15 calendar days by service unit
- c) Quantity of preventive maintenance backlogged work orders aged beyond 15 calendar days by service unit.

2. Implementation. Perform an analysis of "how to's" prior to the fiscal year start so that collected data has value for personnel during the process. Managers should be willing to continually use monthly collected data to keep their reporting staff focused as the year progresses. The bottom line question is, "If facilities organizations are collecting what truly matters to make a positive difference within their respective organizations, should they wait until the fiscal year end to file the data in neatly bound notebooks?"

3. Continually review performance indicator for validity. The responsibility for valid data is not that of the computer support personnel individual(s).

The managers should collectively review the information and provide guidance to computer support staff.

4. Evaluate the results. Managers should review those reports with their reporting staff and ask questions about what the data is telling them well before the fiscal year end. Obviously, the year-end data is necessary to compare to the previous fiscal year as to establish trends.

Three or four quick facts relative to the results should be shared with the senior leadership. This group can increase your circle of influence due to the broad spectrum of inter-related political, social, and strategic events encountered through the year. Let them assist you as advocates.

Although there are several goals and objectives to be identified within a university's planning structure that must interrelate to fulfill the vision and mission of the institution, a most essential inherent facilities goal must be the leader's responsibility to keep the management team focused on the "big rocks." When we collect data then, let it be meaningful information that can hold people accountable for increased achievement.

Having measurable performance indicators within the organization are at the heart and soul of creating competitiveness and teamwork. Will there be risks associated with the information?

Of course. However, we need managers and staff who thirst for improvement and understand the economic reality of poor performance with possible associated outcomes.

Let no one in your organization ask the question, "Why do we collect all of this information anyway?" Good people and organizations that use key performance indicators as part of focused action plans have the capability to become great organizations. 🏆

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The Link between Construction and Maintenance

by Matt Adams, P.E. and Mark Wantage, P.E.

The state of Ohio embarked on a program several years ago to improve the quality of its school district facilities. This huge program will potentially impact each of the 680 school districts in the state as well as thousands of individual structures. The Ohio School Facilities Commission (OSFC) was created to oversee and manage this effort. Industry best practices are the rule of law at OSFC; this includes all the disciplines associated with stewardship of assets after construction is finished. While the business of planning, designing, and constructing buildings has been highly streamlined at OSFC, hand-off to the districts is now also being radically improved—mostly because of commissioning. Mark Wantage is in charge of integrating construction with long-term maintenance. His first initiative was to introduce best practice commissioning of the newly constructed or renovated district facilities. This effort provides a ideal case study for our industry.

OSFC school districts are required to have a fully developed and commission-approved maintenance plan in order to complete the closeout process and tap into their maintenance funds set aside for this



use. These maintenance plans are often obscured and not implemented due to delays in construction and to new systems that did not perform. A majority of the OSFC construction projects proceed and are completed without great difficulty. All suffer from transitional issues that require some level of attention. Even on what would be considered a typical project, there is maintenance work being deferred due to concerns that warranties would be violated or contractors would start blaming their local school district staff for system breakdowns.

Control systems typically are not fully installed by the end of the construction project. There are many reasons for this to occur. The control systems that are in place are not fully utilized by the maintenance staff primarily because of insufficient training or training that occurred using a system that was not fully operational. In both cases the maintenance staff could never know what they did not know.

There are buildings where the HVAC system did not work, where

noise level, technology, and energy consumption were all issues. Project closeouts were delayed and solutions were often times difficult to achieve. When the maintenance plan was delivered, it was overshadowed by ongoing construction problems.

At OSFC there is in place a developed and intricate project planning and management system to facilitate a construction rate value of approximately \$2 million dollars a day. It is a large, geographically widespread and long-term process that includes within its scope construction managers, multiple prime contractors, and the individual school districts throughout Ohio. It is this perspective that has allowed the school district personnel to see the gaps in the construction process. Patterns developed that showed there were issues that required special attention. A plan for early intervention was necessary to effect a change.

In 2004, the Ohio School Facilities Commission engaged third-party commissioning as a tool to affect both the construction process and the post-construction operational issues faced by the owner—the school district. Primary commissioning focuses are the mechanical, electrical, plumbing, and controls systems of a building. Currently, there are eight school construction projects that have added commissioning to their construction process. The buildings range from 50,000-square feet to 345,000-square feet, and the largest project to date is the 609,000-square feet, seven-building Mad River project. A majority of the projects have been commissioned at the end of construction or postoccupancy.

During the commissioning process, it was discovered that the first and most common complaint from a new

Matt Adams is president of The Adams Consulting Group, Atlanta, Georgia. He can be reached at matt@adams-grp.com. Mark Wantage is facilities construction support and maintenance administrator, Ohio School Facilities Commission (OSFC), Columbus, Ohio. He can be reached at mark.wantage@osfc.state.oh.us. This is his first article for Facilities Manager.

building owner is that the HVAC system is not working effectively. Referring to the eight OSFC commissioning projects; they are correct. Mechanical and control systems were not completed, were installed incorrectly, or were not functioning. In some cases the test and balance report required re-inspection due to discrepancies found during commissioning activities.

Commissioning Issues Raised

School A

1+ years postoccupancy with temperature, humidity control, and general HVAC issues along with freezing of coils.

- Two AHU hot and cold lines reversed at the unit.
- High air velocities pulling filters from frame.
- Three heat wheels not functioning.
- Controls installation not complete.
- Heat pump controls not to the designed intent.
- A return air humidistat installed in the supply plenum.
- Cooling tower temperature sensors not properly installed.
- Serious issues with the system air and water balance.
- Cooling tower sump could not be drained.

School B

1+ years postoccupancy with humidity and temperature control problems and mold development concerns.

- Thirty-seven of 45 unit ventilators had problems.
- Fifteen with outside air damper linkage loose or disconnected most full open.
- Nine with defective hot water valves.
- Seven of the three-way valves were plumbed in backwards.
- Four of the nine valves had been replaced during the warranty period by the original contractor.

School C

Under construction:

- Commissioning shed light and attention to the fact that the controls contractor was falling

behind. As a result, the construction team and the contractor were able to address the issue along with increasing their effort and oversight.

- The maintenance staff is working with the commissioning agent allowing them to participate as a more effective member of the construction team and learn more of the systems and controls operations.

OSFC school districts are required to have a fully developed and commission-approved maintenance plan in order to complete the closeout process and tap into their maintenance funds set aside for this use.

These three examples are provided to highlight the level of problems that are being encountered. There are projects in much worse condition and projects progressing much better. In all cases, it is the maintenance staff that is the common denominator. They will be married to the facility after the rest of the construction team has left the reception. In the case of School A, the maintenance staff had taken a hands-off approach to providing maintenance and support services. They felt that the construction process had not ended and the problems were for the contractors to solve. The contractors felt that individually they had completed their obligations and if there was a specific problem that they would honor their warranty.

The combination of finger pointing and the onus placed upon the owner to define the problem left the maintenance staff overwhelmed. As a result, coils were fouled due to the filter problem. What filters were there, were not changed. The heat wheels were damaged, coils were freezing in the winter, and systems generally ran

uncontrolled, leaving students and staff uncomfortable. The maintenance staff had no time for planning or preventative maintenance because they had to deal with the complaints and the system failures. As a result, there were substantial costs in terms of capital equipment, energy consumption, and building conditions. The blame was first focused on the construction and the contractors, but over time, it began to taint the reputation of the maintenance staff and school administration.

In the case of School B, the maintenance supervisor worked the systems to the best of his abilities. He utilized his resources and learned as much as he could in order to operate the systems properly to control the room conditions. Understaffed, the best he could do was maintain the status quo for a failing operation. He was unable to fully implement his maintenance plan due to the fires he had to put out that were left from the project. As time passed, the lore grew and the Superintendent and School Board grew less satisfied. This is not a situation conducive to asking for more staff.

The third example is of a construction project that has engaged commissioning midway through the timeline. Commissioning allowed the contractors to make changes that might have delayed the project at final closeout and caused additional problems in the future. These issues are engaged in-process; therefore, the contractors can effect changes while they are still mobilized. When the project is turned over to the owner, the expectations are that all the systems will be operating as the design intended. The maintenance staff, as part of the construction process and with the requisite training and practical experience gained by shadowing the commissioning authority, is better prepared to take on the general operations and maintenance without having to be overwhelmed by lingering construction problems.

School D

End construction commissioning near completion:

- General controls issues of concern and many minor mechanical issues were discovered and corrected.
- Training was an issue and as a result was augmented.

The contractors and engineers were professional and worked with the

commissioning team to resolve problems as they occurred. The result is a project that is better able to maintain their timeline. The maintenance staff became more involved with the project as a result of the commissioning process and they are now better equipped to maintain their systems.

In most cases, the construction team is professional and makes the building corrections necessary and

These contractors, engineers, and architects have begun to view commissioning as a useful tool not just to catch problems early when they are less expensive to fix, but also as a validation that they have done their job and have performed well for the owner.

effectively. These contractors, engineers, and architects have begun to view commissioning as a useful tool not just to catch problems early when they are less expensive to fix, but also as a validation that they have done their job and have performed well for the owner. In other cases, the commissioning is a clear unemotional collection of problems that must be answered. The construction team uses this tool to plan a course of action. The "Owners" (School District) of commissioned projects are first relieved that there is an effort to help solve the existing problems and then are newly excited about their new facilities.

The maintenance staff in these schools, as a rule, is first reluctant and then embraces the commissioning process. Those schools with long-standing problems are excited to begin to focus on establishing a routine maintenance program. The maintenance staffs that are involved with commissioning during the construction process are relieved to have an advocate that they can work with and because of that, most take the opportunity to learn the new systems and operations. All staff can then feel more confident about their understanding of the facility and what is needed to properly maintain it into the future. 🏠



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

There's nothing better than to have a mechanical expert step forward and offer to review a book about mechanical systems. Thankfully, John Casey is willing to step out of retirement and help those of us who are busy understand the value of a good book about building systems. Just in case you haven't committed to all your summer projects, look at these books; they might help you make better decisions. Then to top it off, check out John's recommendation on the history of American higher education. John took the time to write about books that fit his background and interests, how about you?

Practical Controls: A Guide to Mechanical Systems, by Steven R. Calabrese. Lilburn, Georgia: The Fairmont Press, 2003, 469 pages, hardcover.

Practical Controls

is a technical handbook which has merit for every institution. The author has succeeded in systematizing the chaos that exists in the field of complicated mechanical controls which operate the environmental systems for most modern buildings. While not specifically written for educational facilities, this book successfully covers the field of electronic and

Ted Weidner is assistant vice chancellor of facilities management & planning, University of Nebraska-Lincoln, Lincoln, Nebraska and president of Facility Asset Consulting. He can be reached at twidner2@unlnotes.unl.edu.



computer-based heating, ventilation, and mechanical (HVAC) controls which are employed to manage indoor conditions in our structures.

Someone on every campus must have at least a general knowledge of this continually evolving and expensive component of each facility on campus, and *Practical Controls* is an excellent primer for this subject. This book is not meant for the president or the vice-president for facilities management. However, institutions should consider purchasing this for the person who answers the bell when building systems fail to maintain appropriate comfort levels whether it be the Genetics Laboratory, the Faculty Lounge, or, God forbid, the President's Office.

Handbook of Facility Assessment, by James E. Piper. Lilburn, Georgia: The Fairmont Press, 2004, 452 pages, hardcover.

Recent articles in *Facilities Manager* concerning facility audits and assessments have been numerous and instructive. Brian Fenn's description of such work at Queensland University of Technology in the September/October 2004 issue is a great example of the wealth of excellent

information available in this area. Clearly, the results of thorough and accurate assessments can assist leaders to do the right things and managers to do the things right (my apologies to the originator of that profound comparison for forgetting his or her name).

James Piper presents a handbook for evaluating generic buildings; it is not specifically aimed at educational facilities. As a result, the cook-book approach, complete with forms for each building component, may not cover all the bases in a typical academic/research/public service setting. The book, however, does have merit for facilities that may lack high-powered research and specialized buildings. Unfortunately, some of the principal functions and components of "typical" higher and postsecondary educational campuses are not mentioned, including indoor recreation courts, laboratories, and food service facilities, to name a few.

This handbook may help facilities management professionals who are just starting to implement an assessment program; if you are in that mode, I would suggest that you purchase the book to get a general feel for the process and the commitment involved in such an exercise. However, institutions already undertaking facility audits and assessments would probably not benefit from the book.

Continued on page 56



APPA

SAN JOSE, CALIFORNIA proved to be a wonderful setting for the January APPA Institute sessions. The week prior to our arrival, California suffered flooding rains, but as we arrived, the sun came out for a great week of California weather and scenery. In addition to a full week of classes, attendees found time to visit San Francisco and other Bay area attractions. The San Jose Fairmont Hotel made our stay pleasant with nice guest rooms and meeting spaces, good meals, and attentive staff.

San Jose was one of our larger gatherings as over 450 Institute attendees were joined by 41 Supervisor's Toolkit and 22 Leadership Academy attendees. This is the first time the Leadership Academy has co-located with the Institute. Considering the positive comments, we'll try to continue this at future venues.

The Thursday night banquet is always a high point of the week as Institute graduates are recognized and receive their certificates. Seventy-five attendees graduated in San Jose, with Texas leading the states, boasting ten graduates.

We will look forward to seeing many of you in September as we return to Norfolk, Virginia. Close to Colonial Williamsburg, Jamestown, Yorktown, Virginia Beach, and the Chesapeake Bay, the Tidewater area of Virginia offers a variety of attractions. For the history buffs, this area can't be beat. **SEE YOU IN NORFOLK!**



OUR GRADUATES

• Ada	L. Baldwin	<i>University of North Carolina/Greensboro</i>
• William	J. Baldwin	<i>Cornell University</i>
• Bruce	C. Beale	<i>University of Virginia</i>
• Robert	C. Bean	<i>Cornell University</i>
• John	A. Boatwright	<i>University of New Mexico</i>
• Thomas	P. Bonnette	<i>Champlain College</i>
• Scott	J. Brown	<i>Miami University Ohio - Hamilton Campus</i>
• Donna	P. Budge	<i>University of Texas/Austin</i>
• Raul	A. Bueno	<i>San Jose State University</i>
• John	F. Burke	<i>Wilkes University</i>
• Steve	Clark	<i>University of Virginia</i>
• Tom	J. Clement	<i>Woodward Academy</i>
• Dennis	Conroy	<i>Phillips Academy</i>
• Gregory	Cuprak	<i>West Chester University</i>
• Mark	S. Dahl	<i>North Dakota State University</i>
• Oscar	Del Corral	<i>Instituto Educational F.D. Roosevelt</i>
• April	S. Denman	<i>Cornell University</i>
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• Richard	D. Duecker	<i>University of Texas/Austin</i>
• David	Eldridge	<i>John Hopkins University</i>
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• Thomas	Flood	<i>Elon University</i>
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• Holly	A. Gross	<i>Purdue University</i>

Institute visits

San Jose

Marlene		Gushulak	University of Saskatchewan
Doug		Hammerle	Miami University of Ohio
Frances		Haney	UCLA
Angel		Hernandez	San Diego State University
Anita	L.	Higgins	University of Southern Maine
Carlos		Irlas	Texas Woman's University
Christopher	O.	Jackman	Georgia State University
Sally		Katz	New York University
Colin		Lacey	Okanagan University College
Greg	B.	Lampman	California Poly/San Luis Obispo
Kevin	J.	Larson	St. Olaf College
Paul	J.	Leamy	Arizona State University
Bruno	A.	Loya	Pima Community College
William		Lucas	University of Texas
David		MacDonald	Cornell University
Gary	A.	Mangina	Illinois State University
Daniel		McCarthy	University of Massachusetts
Fred	J.	McCullough	Monroe Community College
Michael		McGinnis	Indiana University
Timothy	P.	McLellan	Midlands Technical College
George		McPhail	Middlebury College
Stephen	L.	McRae	Superintendent of Schools/Heidelberg
Donnie		Mears	UTMB at Galveston
Phillip		Miller	Kenai Peninsula College
Warren		Moulaison	Saint Mary's University
Kevin	E.	Murner	Georgia College & State University
Mark	E.	Myer	East Carolina University
John		Rashid	University of Minnesota/Duluth
Fred	L.	Reill	Paradise Valley Community College
Charles		Roper	Rutgers University
Linda	L.	Ross	Middlebury College
Richard	G.	Ruark	Georgia College & State University
Kenny	D.	Rutherford	University Texas Medical Branch
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A History of American Higher Education, by John R. Thelin, Baltimore, Maryland: The Johns Hopkins University Press, 2004, 421 pages, softcover.

The development

of higher education is a special and interesting subset of the history of the United States. The study of higher education history and higher education law are staple courses in the curriculum of graduate degree programs on most college campuses in the country. In fact, each course complements the other, since many historic milestones in the academic world are the cause or the result of legal matters. The history course, however, remains the primary framework for advanced study of the role of higher education in the United States beginning with the founding of Harvard. Facilities managers can and should profit from the information

available to us from this special field of knowledge.

Unfortunately, the quantity of books available on the subject of higher education history from 1636 to the present is limited, and over 40 years have passed since the last group of readable and comprehensive histories was printed. Finally, however, John Thelin has produced a well written and engaging review of higher education's journey into the fabric of our culture.

The book does contain all the whistles and bells of a scholarly work, including endnotes and references representing years of research and study, and could easily have been another boring and dry "tiptoe through the historical tulips." But, thank goodness, it is not that at all.

The author has divided the history into eight time periods, reflecting his selection of events which define logically-associated eras in the development of the academy. The information

is presented in a conversational style which engages and retains the reader's attention, as all good books must do. Clearly, Dr. Thelin has raised the bar for historians of higher education to clear in the future, and everyone associated with college and university life is better for it.

I used to think that there were only three universal rules for success in higher education facilities management:

1. Say YES to the President.
2. Say MAYBE to the Deans and Vice-Presidents.
3. Say NO to everyone else.

I will now add a fourth rule;

4. Learn all you can about our profession.

An excellent way to implement number four would be to get a copy of John Thelin's *A History of American Higher Education*. 📖



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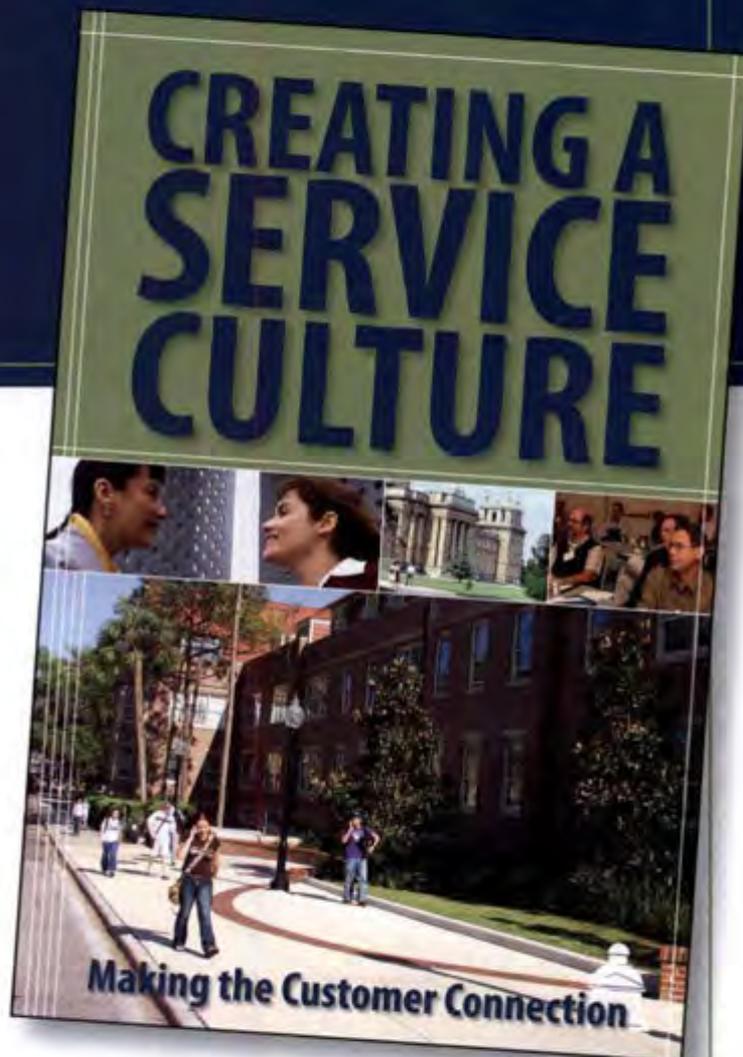
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Coming Events

For more information on APPA seminars and programs, visit our website's interactive calendar of events at www.appa.org.

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.

Sep 18-22—Supervisor's Toolkit: Nuts and Bolts of Facilities Supervision. 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—CAPP Regional Meeting. Little Rock, AR. Contact David Millay, 501-569-8897; e-mail dmlillay@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 9-12—MAPPA Regional Meeting. St. Paul, MN. Contact Tom Dale, 651-962-6530; e-mail tdale@stthomas.edu.

Other Events

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

Apr 18—Going Green: Effectively Deploying Green Buildings, Online Conference. Contact Academics Impressions, 720-488-6800, www.academicimpressions.com.

Apr 18-20—Fundamentals in Industrial Ventilation. Cincinnati. Contact Anita Schmid, 513-742-6163; e-mail aschmid@acgih.org.

Apr 20-23—49th Annual CSI Show & Convention. Chicago. Contact Construction Specifications Institute, 800-689-2900; e-mail csi@csinet.org.

Apr 21-22—Practical Applications of Useful Equations. Cincinnati. Contact Anita Schmid, 513-742-6163; e-mail aschmid@acgih.org.

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>.

Apr 28—2005 Top Ten Green Projects Lecture. Washington, D.C. Contact Erika Taylor, 202-626-7407; e-mail etaylor@aia.org.

May 4-6—13th National Conference on Building Commissioning. New York. Contact Summer Lewis, 503-595-4484; e-mail slewis@pecci.org.

May 19-21—AIA Annual Conference. Visit www.aia.org/ev_conv_aia-05.

May 25-29—CSC/DCC Conference 2005. Edmonton, AB, Canada. Visit <http://www.conference2005.ca>.

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.

June 6-10—NFPA Work Safety Conference & Exposition. Las Vegas. To register call 1-800-397-6209 or visit www.nfpa.org.

Jun 26-29—IDEA's 96th Annual Conference & Trade Show. St. Paul, MN. Call 508-366-9339 or visit www.districtenergy.org.

Jul 8-10—NCCIHE's 6th Annual Conference. Baltimore. Contact Cheryl Mermigos, 860-586-7567; e-mail emermigos@ncci-cu.org.

Jul 9-12—NACUBO Annual Conference. Baltimore. Visit www.nacubo.org.

Jul 17-19—AUCHO-I 57th International Conference. Milwaukee. Contact Jennie Long jennie@acuho-i.org.

Jul 19-21—Americas' Fire and Security Exposition. Miami. Contact Lorena Solarczyk at lsolarczyk@nfpa.org.

Jul 21—2005 DC Branch Green Industry Professional Field Day and Trade Show. Alexandria, VA. Contact Mary Beane 703-250-1368.

Jul 23-27—SCUP Annual Conference. Washington, D.C. Visit www.scup.org.

Aug 9-12—National Collegiate CADD Conference. Ames, Iowa. Contact Lola Van Wyk, 515-294-8313 or visit www.nccconf.org.

Sep 11-13—CMAA's 2005 National Conference & Trade Show. Huntington Beach, CA. Contact

703-356-2662. Event website
www.cmaanet.org.

Oct 18-21—EDUCAUSE 2005.

Orlando. Visit www.educause.edu.

Oct 18-21—ISSA/INTERCLEAN

2005. Las Vegas. Call 800-225-4772
or e-mail info@issa.com.

Oct 18-21—Supervisor's Toolkit:

**Nuts and Bolts of Facilities Super-
vision.** Las Vegas. Contact Suzanne
Healy, 703-684-1446; e-mail
Suzanne@appa.org.

**Oct 31-Nov 1—Construct Alberta and
Homebuilder & Renovator Expo.**

Calgary, AB, Canada. Visit
www.constructalberta.com.

Answers to HBCU's Trivia Quiz
(from page 21)

- | | |
|------|-------|
| 1. b | 6. c |
| 2. b | 7. a |
| 3. a | 8. b |
| 4. c | 9. c |
| 5. c | 10. c |

Index of Advertisers

Adams Consulting Group (www.adams-grp.com)	34
Air Cycle Corporation (www.aircycle.com)	41
APPA Institute for Facilities Management (www.appa.org/education)	54-55
APPA Publications (www.appa.org/applications/publications)	15, 58
Bartlett Tree Expert Company (www.bartlett.com)	60
Carrier Corporation (www.commercialhvacservice.carrier.com)	13
Carrier Rental Systems (www.hvacportablesystems.com)	52
Carter & Burgess, Inc. (www.c-b.com)	47
CDM (www.cdm.com)	56
Dorlen Products (www.watenalett.com)	42
DriTherm Inc. (www.dritherm.com)	8
Eurotex (www.eurotexinc.com)	14
Famis Software, Inc. (www.famis.com)	Cover 4
Gale Associates, Inc. (www.galeassociates.com)	40
Georgia-Pacific Corporation (www.gpgypsum.com)	7
Gilsulate International, Inc. (www.gilsulate.com)	28
Informed Software (www.contractron.com)	46
IR SSA Commercial (www.irsafeschools.com)	22
Johnson Controls, Inc. (www.johnsoncontrols.com)	37
Lerch Bates & Associates - Elevators Consulting (www.lerchbates.com)	43
Marcis & Associates (www.marcis.net)	Cover 3
Maximus, Inc. (www.assetsolutions.maximus.com)	Centerfold
McCourt Manufacturing (www.mccourtmg.com)	29
Outokumpu Heatcraft Commercial (www.heatcraft.com)	18
SaniGlaze International, LLC. (www.saniglaze.com)	20
Siemens (www.sbt.siemens.com)	3
Stanley Consultants Inc. (www.stanleyconsultants.com)	49
Strategic Distribution, Inc. (www.sdi.com)	5
Strobic (www.strobicair.com)	35
Tennant Company (www.tennantco.com)	9
TMA Systems, LLC. (www.tmasystems.com)	Cover 2
WFF Facilities Services (www.wffservices.com)	19

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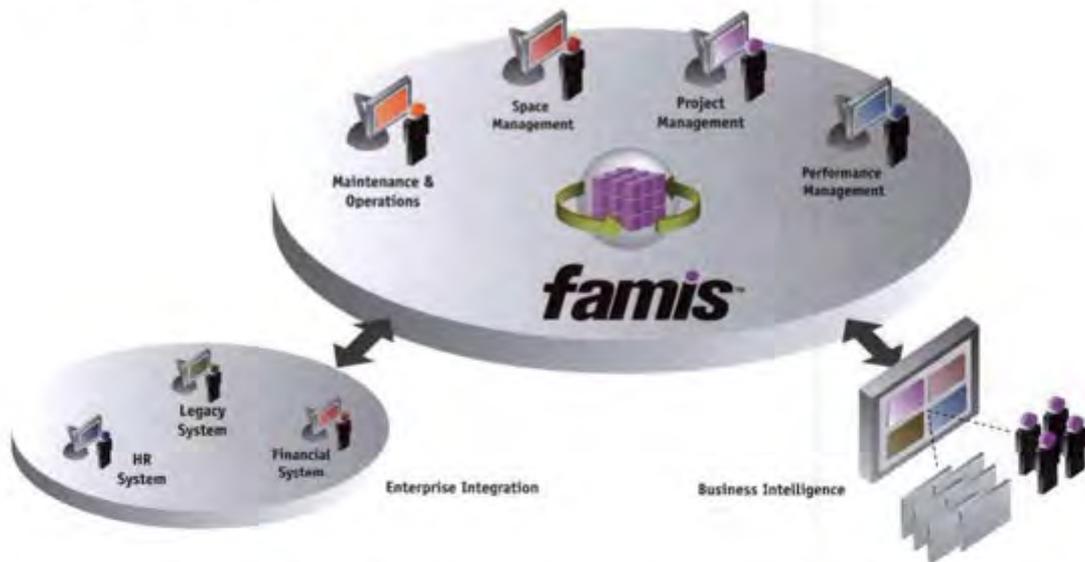
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