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Facilities Officers

Facilities Manager

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Training
Facilities Workers



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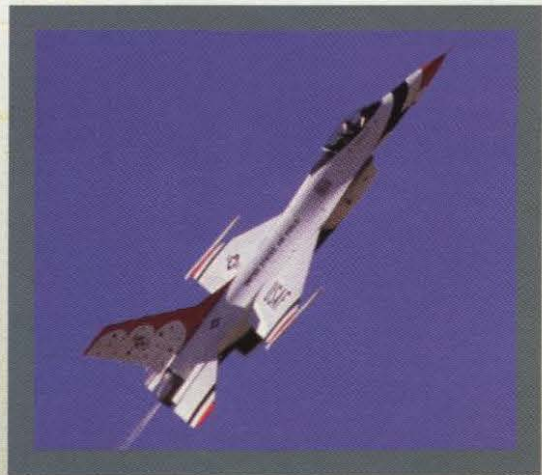


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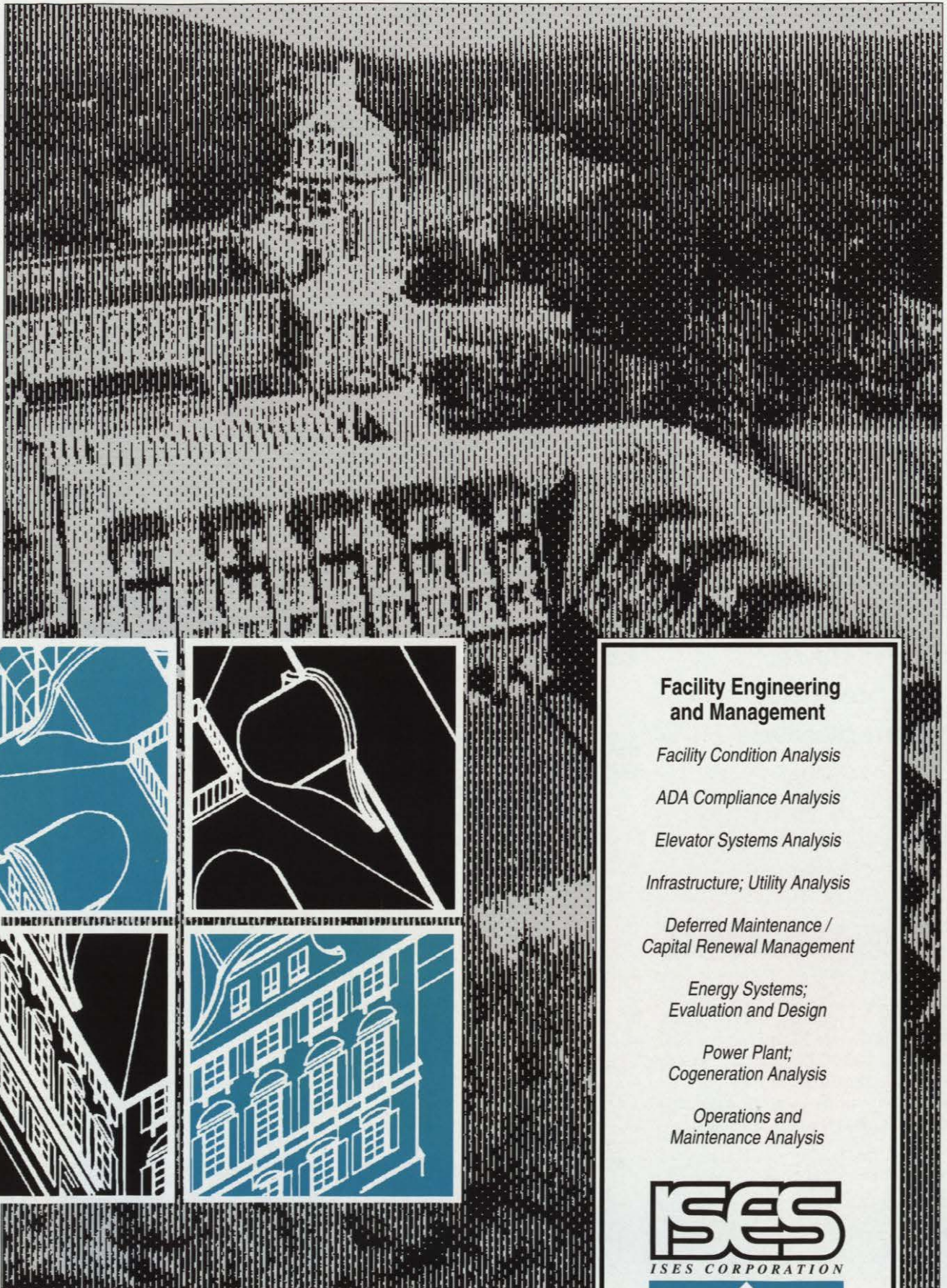
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From The Editor

Steve Glazner

Training is an ongoing and evolutionary process required in virtually every segment of society. It is an investment in the most valuable resource we've got—our employees—and involves a high level of long-range planning, prioritizing financial and human resources, and being aware of new and important changes in both technology and management approaches.

This edition of *Facilities Manager* is the second in a series of theme issues that will be published each winter and summer. "Training Facilities Workers" is the topic covered in the nine feature articles and several columns found in this issue.

We kick off the features with David Byer's comprehensive overview of President Clinton's plans for enhancing training opportunities for U.S. workers. Campus facilities workers will certainly be affected by any legislation that comes from this effort.

Other articles discuss the apprenticeship training program at the University of Maryland, the skilled craft training program at Purdue University, the MAPPA Training Network, the ERAP-PA video lending library, and the TQM implementation and training program at Miami University.

If you ever have to make a technical training presentation to a large group, regardless of your experience, you will want to read Santalynda Marrero-Johnson's article. Todd Bemenderfer provides senior managers with a taste of APPA's Executive Development Institute for Facilities Managers. Lander

Medlin provides an overview of the newly-developed APPA/Ogden supervisory training modules, which will be ready to ship by this fall.

Training and professional development can come from a variety of sources and should be complementary to all that you have learned in school, on the job, or in other training environments. APPA offers excellent educational programs through its Educational Conference and Annual Meeting, the twice-yearly Institute for Facilities Management, the annual Executive Development Institute and the Institute for Facilities Finance, and numerous seminars and workshops. The APPA regions and chapters are also an important source for specific training and learning opportunities.

In addition, APPA has published numerous articles and books on training, such as the "Training and Development" chapter in the *Facilities Management manual*, *Personnel Management and Development* (Critical Issues series), and *Tapping Potential: Issues in Human Resource Management*.

Finally, don't forget the importance of your own ongoing training. If you are a chief facilities officer or associate director, you may be more concerned about your staff's training needs than your own. However, if you don't keep up with changing technologies and management practices, you may find yourself less equipped to handle the changing workplace than your staff is.

As always, we hope you enjoy this issue of the magazine, and we invite your comments and suggestions. ■

APPA News

A Report on APPA's Annual Meeting

By Norman H. Bedell

Assistant Vice President for Physical Plant

Pennsylvania State University
University Park, Pennsylvania

President Don Mackel asked the junior and senior Board representatives to review the format of the APPA annual meeting and offer suggestions for improvement. This review was conducted during the midyear Board of Directors meeting in Alexandria, Virginia last February. The discussion also included John Harrod, vice president for educational programs. Membership surveys conducted by the Educational Programs Committee were considered during the discussion.

Five major factors were identified as relevant to the success of APPA annual meetings: 1) programs, 2) site, 3) cost, 4) date scheduled, and 5) all other considerations.

Programs

We discussed modification of the educational, social, and spouse programs to more effectively meet the needs of the members. We concluded that spouse programs should be given a low priority because the number of registered spouses at the last few meetings has been very low. (Many spouses do come to the meeting but do not register for scheduled events.) It does not appear to us that spouse attendance is as important to member attendance at APPA annual meetings as it is for the regional annual meetings. We concluded that educational programs should continue to be emphasized, while social programs should be deemphasized.

The target audience of the APPA

annual meetings is the institutional representatives, who have indicated on recent surveys that they attend the meeting to network with their peers from other institutions and to see the products offered by vendors. The APPA Institute for Facilities Management, on the other hand, provides an excellent means for development of the junior staff persons in our organizations. In many cases, the institution's budget for travel or education and training is extremely limited, and it is easier to obtain approval to attend an annual meeting if the educational aspect is emphasized in the literature describing the meeting.

The Educational Programs Committee is already working on a proposal to design one of the annual meeting program tracks to be an executive institute or refresher institute to provide a more attractive program for institutional representatives. The addition of this new track would allow the program to become an executive institute that would run concurrently with the annual meeting and encourage institutional representatives to attend.

Site

The site is an important factor in a member's decision to attend the meeting. The site must be perceived as being an interesting area. Those who attended the Indianapolis meeting in 1992 found a very interesting city; however, the area did not have broad appeal to our members as we read the preliminary program and made our decisions about attending the meeting. The representatives concluded that it was less important to select cities in areas that offer good vacation potential than it was for

the city to appear to be interesting.

The current policy for rotating the meetings through different cities in the six regions of North America should be reexamined to use only cities that are popular tourist cities and that offer inexpensive airline fares. It is not necessary to have meetings in Canada, for instance, where the last meeting held there had a significant reduction in vendor participation and, therefore, a

reduction in revenue. Many of the vendors who normally attend our annual meetings did not feel that spending the necessary funds to rent a booth in Canada was a good marketing expense. Six to eight cities in the United States should be identified as our target sites and the meetings should be rotated between them. The city selected would be based on the cost of conference facilities using our



Norman H. Bedell

most aggressive hotel and conference negotiators to hold down costs of the facilities.

We examined the proposal from one of the surveys to conduct the APPA Institute concurrent with the annual meeting. We concluded that the Institute is more flexible in its current schedule and therefore could be held in a wider variety of cities. Cities should be selected that are more attractive to the younger group who attend the Institute, and the site of the Institute would not affect its attendance as much as the site will affect annual meeting attendance.

Cost

Of all the cost factors related to the meeting, travel and hotel room costs are the most important. APPA should continue to work with the larger hotel

chains to obtain the best package possible for low hotel room costs. Fees for the annual meeting educational and social programs are probably not significant items; however, reduction of spouse fees would increase their participation in meeting scheduled events. When the cost for the spouse to attend the annual banquet reaches \$45 to \$50, the number of spouses in attendance will be low.

Date Scheduled

The survey of institutional representatives revealed that the summer (June or July) dates was the preferred time for the meeting. The third highest number of responses indicated that February was a potential time for the meeting. After evaluating the potential travel problems due to adverse winter weather and the winter academic schedules, we concurred that the annual meetings should remain on the current summer schedule.

Other Considerations

Although vendor participation has been high, we concluded that the vendor marketing program should emphasize attendance of institutional representatives who are the decision-makers for products purchased by their institutions. This should help convince more vendors to attend.

We felt that it was important to inform supervisors at our institutions of the value of attending APPA annual meetings. They may have the impression that the APPA annual meeting is a social function, as are some other associations' annual meetings. In fact, the APPA annual meeting is a working and educational activity that is well worth the expense of attending, even though the annual travel budget may be limited.

We concluded that persons who have never attended an APPA annual meeting should be encouraged to attend by offering scholarships from APPA or the regions for fees, hotel, or travel expenses. One possibility was to offer the first twenty-five first-time attendees a scholarship that would waive all or a portion of the registration fee.

Our work is not completed on this

report because the senior and junior APPA representatives will be considering the conclusions reached at the St. Louis annual meeting. I am sure that

either Vice President John Harrod or President Don Mackel will have more comments on this important topic during the meeting. ■

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Letter to the Editor

"Using Campus Facilities for Marketing" by Bruce Carmichael (Spring 1993 *Facilities Manager*) clearly articulates the importance of first impressions of campus facilities in marketing colleges to potential students and their families.

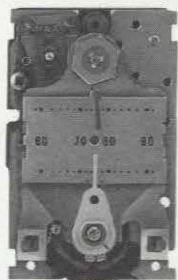
In fact, according to a 1984 study of 1,000 high school seniors by the Carnegie Foundation for the Advancement of Teaching, more than 60 percent said "appearance of the grounds and buildings" influenced them the most during their college campus visits.

Thanks to Mr. Carmichael for outlining why the overall quality and character of a campus "sense of place" play an important role in achieving the marketing objectives of the institution.

—Jennifer Jones

Associate Vice President
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St. Mary's Wins Award for Excellence



Donald L. Mackel,
Charles W. Jenkins,
Daniel J. White.

APPA President Donald Mackel presented the Award for Excellence to St. Mary's University (Texas) on May 19. Accepting the award was Daniel J. White, vice president for administration and finance. The award is the highest recognition afforded an APPA member institution.

To receive the Award for Excellence, the candidate institution must conduct a rigorous self-analysis of its facilities administration in the specific areas of purpose and goals; organization and resources; policies, procedures, and processes; personnel training and development; fiscal planning and management; campus condition and appearance; communications and quality of relationships; and campus planning. Once the analysis is complete the school submits to APPA a narrative

statement that documents and supports the claim of excellence. The APPA Professional Affairs Committee reviews the narrative and votes on whether it describes an excellent operation. The St. Mary's narrative was unanimously endorsed by the committee.

A third-party APPA member is then sent to the candidate campus to verify that the claims made in the narrative are factual. The St. Mary's verification was performed by John Greene, director of physical plant at Trinity University, who said in his report to the Professional Affairs Committee, "I found that the information previously submitted to you is in fact an accurate reflection of the excellence of this operation. It is with great honor that I recommend St. Mary's University for this honor."

In 1988 and 1989, St. Mary's was the



The facilities team at St. Mary's (l-r): Donald J. Ferguson, Charles W. Jenkins, David A. Miller, Phoebe E. Briseno, William M. Tam, Tony Guzman, & Juan Ramirez.

Central Region's nominee in the small campus category. In 1991, the competitive aspect was removed from the process in favor of the current procedure. This is the first time the award has been made to any college or university under the new procedure.

In accepting the award, White praised the members of the physical plant department for earning the honor and for their everyday excellence in supporting the university's mission.

Once having received the award, a member cannot reapply for five years. The physical plant department is already planning the improvements that will justify the award in 1998, according to Charles W. Jenkins, St. Mary's facilities director.

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Pastin Wins 1993 Rex Dillow Award

Dr. Mark Pastin, director of the Lincoln Center for Ethics and professor of management at Arizona State University, is the recipient of the seventh annual Rex Dillow Award for Outstanding Article published in *Facilities Manager*. The award will be given at the 1993 Educational Conference and 80th Annual Meeting in St. Louis, Missouri.

Pastin's article, "Power, Influence, and Survival in Difficult Times," was published in the Fall 1992 issue of *Facilities Manager*. It was adapted from his keynote address given at APPA's 79th Annual Meeting last year in Indianapolis. The article was selected by APPA's Information Services Committee from among ten eligible articles. Only articles written by full-time employees at APPA member institutions are eligible for the award.

The Rex Dillow Award was named for member emeritus Rex O. Dillow, who has made many valuable contributions to APPA's publication program. Dillow was editor-in-chief of the first two editions of APPA's *Facilities Management* manual, he received APPA's Meritorious Service Award in 1983, and he received the President's Award in 1989. Dillow is currently the

newsletter editor for the Central Region.

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The Environment

Barbara Hirsch

Starting with this month's magazine, you will notice that I am writing both the Capital Notes and The Environment columns. When APPA began its government relations program, it was the intention that the director take on responsibility for The Environment column. I want to thank Stephanie Gretchen for continuing to write The Environment column over the last few months while I became acclimated in my new position.

However, one of the problems of writing two columns, both of which contain essentially government relations information, is deciding what type of news to put in each one! I settled on a regulatory versus legislative approach. The Environment column will focus on regulatory matters, information on new bulletin boards and training materials relating to environment, and energy issues. All other news will appear in the Capital Notes column.

Substitutes Lists for CFCs and Announcement of SNAP Program by EPA:

The EPA has issued a Notice of Proposed Rulemaking on the acceptability of certain substitutes to CFCs and introduced its plan for administering the Significant New Alternatives Policy (SNAP) program for continual review of new CFC substitutes. Under

the program EPA would evaluate and approve applications for use of substitute chemicals and technology to replace ozone depleters in specific uses. A manufacturer or importer of the chemical would have to give ninety days prior notification of intent to sell, use, or distribute the substance before introducing it into interstate commerce. During the ninety-day period EPA would make its decision on whether the substitute is acceptable or unacceptable. Potential substitutes producing a reduced risk over those available will be approved for sale. Comments should be sent to Docket A-91-42, Central Docket Section, South Conference Room 4, EPA, 401 M Street, SW, Washington, DC 20460. For further information contact Drusilla Hufford, Substitutes Analysis Branch, Stratospheric Protection Division, EPA, 401 M Street, SW, Washington, DC 20460; telephone 202-233-9101. (May 12, 1993 *Federal Register*, p. 28094.)



Ozone Depleters Banned from Refrigerators and Air Conditioners:

EPA announced its final rule prohibiting CFCs and other stratospheric ozone depleters from being used during servicing and disposal of refrigerators and air conditioners in homes and businesses. Highlights include a certification program requiring that refrigerant emissions be minimized during the recycling and recovery process; a mandatory EPA-approved technician certification program; a safe disposal requirement; and a requirement that leaks be repaired in equipment with a refrigerant charge greater than 50

pounds. *Federal Register* publication will be made soon, further technical information can be obtained through EPA's Stratospheric Ozone Depleting Information Hotline at 800-296-1996 or call Deborah Ottinger at 202-233-9149.

Federal CFC Labeling Requirements Effective May 15, 1993:

EPA published its final rule on CFC labeling in the February 11, 1993 *Federal Register*, p. 8136. The rule affects the following product categories:

- All containers in which a Class I or Class II substance is stored or transported;
- All products containing a Class I substance;
- All products manufactured with a Class I substance. Prior to 2015 labeling will not be required if EPA determines that there is no safe alternative;
- All products manufactured with a Class II substance. Prior to 2015 labeling will not be required if EPA determines that there is no safe alternative.

Individuals can petition the EPA to temporarily exempt a product from labeling requirements. The petition must show that there are no substitute products or manufacturing processes that do not rely on the use of the substance, reduce the risk to human health and the environment, or are currently or potentially available.

Morgantown Energy Technology Center Financial Assistance Solicitation Available through U.S. DOE:

The DOE, Morgantown Energy Technology Center, plans to issue a Program Research and Development Announcement (PRDA) No. DE-RA21-93MC30056 for research titled "Utilization of Advanced Coal Technology Combustion/Desulfurization Solid By-Products." A minimum cost sharing of 25 percent of the total request is required. For further information contact Diane L. Rother, I-07, U.S. DOE, Morgantown Energy Technology Center, P.O. Box 880, Morgantown, WV 26507-0880.

Barbara Hirsch is APPA's director of government relations.

Telephone: 304-291-4090. (May 11, 1993 *Federal Register*, p. 27718.)

Confined Spaces Rule:

OSHA published its final rule on confined spaces in the *Federal Register* last January. (See January 14, 1993, p. 4462.) Under the rule employers must now implement a program with the provisions listed below to prevent injuries by employees who work in storage tanks and other confined spaces:

- Identify all confined spaces that could endanger workers and establish a program to prevent unauthorized entry;
- Establish a program to train and provide periodic refresher instruction to employees who work in confined spaces;
- Provide rescue teams trained in first-aid and operation of rescue equipment for emergency situations. These teams can be either company-provided or community-based. In addition, develop procedures to alert trained rescuers of emergencies and prevent those lacking rescue training from attempting to rescue injured coworkers;
- Identify hazards and establish testing and monitoring procedures;
- Station an attendant outside confined spaces during worker entry.

Interim Final Standards on Lead:

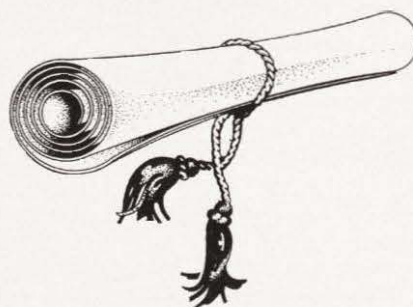
OSHA announced final standards of the permissible exposure limit for lead in construction. Under the rule, employers are required to make an exposure assessment and ensure that no employee is exposed to concentrations of lead in excess of the permissible exposure limit (PEL). To the extent feasible, employers must reduce lead exposure to a level below the PEL or provide respiratory protection.

Respirators and protective clothing and equipment are to be provided at no cost to the employee. In addition, employers must implement housekeeping programs to keep surfaces as free as possible from lead dust. Finally, employers must prohibit smoking and eating in areas where employees are exposed to lead above the PEL. Additional information of the key pro-

visions of these standards, and of all OSHA releases are available for the Department of Labor electronic bulletin

board. Call 202-219-4784; 1200 or 2400 BAUD; Parity: None; Data Bit=8; Stop Bit=1; voice phone 202-219-7343. ■

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Capital Notes

Barbara Hirsch

On The Hill

The House passed President Clinton's budget in a 219-213 squeaker on May 27, making considerable concessions to conservative Democrats on the energy tax and Medicare and Medicaid spending. To win the votes of conservative Democrats from energy producing states, President Clinton had to promise further changes in the energy tax when the budget hits the Senate the week of June 7. Sen. David Boren (D-OK), a senior member of the Senate Finance Committee, proposes killing the energy tax and substituting deeper cuts in Medicare and Social Security to make up the shortfall. In an effort to address the concerns of critics, Senate Finance Committee Chairman Patrick Moynihan (D-NY) is working with the administration to scale back the energy tax to minimize its impact on energy intensive industries and win enough support from conservative Democrats to pass the measure. However, Moynihan says he will not look to Social Security to raise money for deficit reduction beyond the administration's proposal to increase the taxable portion for upper income recipients. As a result, the Finance Committee will have to make deeper cuts in Medicare than those proposed by the administration. Further changes will be made to the tax bill as it passes through the Senate, and it is a good bet that the energy tax will be a shadow of its former self by the time the package hits conference later in the summer.

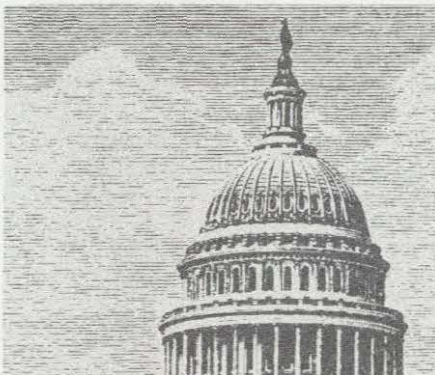
Barbara Hirsch is APPA's director of government relations.

BTU Tax: The week of May 10 the Ways and Means Committee approved the tax bill by 24-14, all Democrats voting in favor and all Republicans voting against. The energy tax survived several Republican amendments, including one offered by Rep. Bill Thomas (R-CA) that would have eliminated the tax altogether. As expected, several changes were made to the tax to help utilities, the aluminum industry, farmers, and other businesses that use heating oil:

- **Rate:** An increase in the base rate for coal, natural gas, and electricity generated by those fuels, from 25.7 cents to 26.8 cents per MBTU. The rate for petroleum products would go from 59.9 cents to 61 cents per MBTU;

- **Natural Gas:** Would be taxed at the retail level with secondary liability on local distribution companies, with a registration system to enforce tax compliance;

- **Electricity:** Would also be taxed at the retail level with secondary liability



on utilities. Fossil fuels used to generate electricity would be exempt from the tax. Renewable fuels would retain their exemption;

- **Electrolytic Processes:** Exemption for energy used in electrolytic process to help aluminum producers and similar industries;

- **Petroleum:** Collection point would be moved to the terminal rack, with a registration program to enforce tax compliance. All oil used for heating would be exempt from supplemental rate;

- **Federal Gasoline Tax:** A portion of the Federal Gasoline Tax, 2.5 cents, would be extended beyond the 1995 expiration date;

- **Agriculture:** Diesel fuel and gasoline would be exempted from the supple-

mental rate for on-farm use. Exemption for ethanol, methanol, and derivatives would be eliminated;

- **Inland Waterways:** The Inland Waterways Fuel Tax increase would be reduced by one-half (i.e., a phased-in increase of 50 cents instead of \$1).

House Clean Water Act Hearings:

On May 12 the House Public Works Water Resources and Environmental Subcommittee wrapped up a series of reauthorization hearings on the Clean Water Act. EPA Administrator Carol M. Browner testified the week of May 10, presenting administration views on amending the law. Browner stated that the administration wants to refocus water pollution control efforts on managing entire watersheds rather than setting discharge limits for specific pollutants. In her written testimony she said that the administration wants to use an approach to clean water that looks first to the ecosystem, evaluates its needs based on risk, and then forms a solution to those needs. Browner stated that she thought the current Clean Water Act would allow the administration to take this approach.

In addition, she testified that the administration wants to encourage industry to voluntarily reduce or eliminate toxic pollution discharges to ease the burden on municipal wastewater treatment plants. She said the main goals of the reauthorization are to protect watersheds, prevent pollution, and strengthen enforcement. She also addressed the importance of making up the \$845 million shortfall caused by the defeat of the administration's economic stimulus package, and exploring options for making state revolving funds easier to obtain by rural communities. By expanding the current twenty-year repayment period, and perhaps forgiving portions of loans in some cases, rural communities would be able to take advantage of the revolving fund program, Browner said.

EPA Budget: Testifying before the House Public Works and Transportation Subcommittee on Water Resources and the Environment on May 5 and the Senate Environment and Public Works Committee on May 11, Browner again addressed the \$845 million dollar shortfall in state revolving loan funds, and testified that she is

working with the White House on considering several options for restoring the funds. Other EPA staff members indicated that the administration may look to restoring all or some of those funds through a streamlined economic stimulus package, but Browner would not confirm that in direct questioning during her testimony.

EPA to Cabinet Bill: On May 4 the Senate approved S.171 to elevate the EPA to the Department of the Environment. Included in this bill were provisions to scrap the Council on Environmental Quality (CEQ) and create a Bureau of Environmental Statistics, an Office of Environmental Justice to address concerns of minority groups, and an environmental policy commission to recommend improvements on EPA management and priorities. However, passage of this bill continues to be problematic in the House due to Rep. John Dingell's (D-MI) opposition to dissolving the CEQ and his skepticism that elevation will do much to improve the EPA's record of bad management and bad science. Further complicating passage of this bill in the House is jurisdiction spread over several committees.

Draft legislation submitted by House Government Operations Committee Chairman John Conyers (D-MI) concentrates on reforming the contracting process. Highlights of the provisions include:

- Prohibiting federal agencies from contracting for inherently governmental functions;
- Prohibiting contract awards to firms with actual or potential conflicts of interest;
- Codifying rules pertaining to cost allowability under federal contracts and extending the penalty system for unallowable costs that are applicable only to defense contracts at present;
- Curbing umbrella contracts by limiting their term, increasing competition, and providing for competitive bidding. Conyers said that these provisions would help to correct current contracting abuses.

Indoor Air Quality Act of 1993: Senate Majority Leader George Mitchell (D-ME) introduced the Indoor Air Quality Act of 1993 (S.626), which

would direct federal and state governments to develop remedies to the problem of indoor air pollution. Mitchell says this legislation is designed to address the threat to human health posed by indoor air contamination, and would require the EPA to develop a

national response plan to reduce indoor air contaminants and develop lists and health advisory documents for those contaminants. In addition, the bill would provide state grants to establish management and assessment strategies on indoor air quality. ■

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Focus on Management

Sigmund G. Ginsburg

Treat Everyone Alike, But Not the Same

Early in my career I had a veteran supervisor who was respected and successful. He once described his management philosophy to me with great pride as being "treat

everyone the same." It took quite a while before I realized that he was wrong.

I suggest that you should treat everyone alike in terms of fairness and decency and applying organizational rules, practices, and evaluation systems. Every individual in your organization should come to expect a general consistency in your approach and style as to how you will deal with management issues.

This does not, however, mean that you treat everyone the same. Each of us is different. What motivates me may not motivate you. A supervisor may need to give some people pats on the back and others kicks in the rear. Although a supervisor should be fair to all, he or she may deliberately be tougher on some than others in order to bring forth effort or develop potential.

Some employees are self-starters, while others have to have things outlined in considerable detail. Some want

or need constantly to check things out with the supervisor, others function best (and it works out best for the organization) if the supervisor simply sets broad guidelines and sees them very rarely. Goad, praising, cracking the whip, holding hands, public compliments, private reprimands—these and other approaches may need to be applied to only some of the various members in the unit.

The sophisticated supervisor assesses the personality and skills of each subor-

The sophisticated supervisor assesses the personality and skills of each subordinate and applies different techniques to different individuals.

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dinate and, while keeping to a generally consistent style (employees don't work well with erratic supervisors), applies different techniques to different individuals. In fact, depending upon the assignment and the stage in the individual's career or previous performance, the supervisor may employ different approaches at different times in supervising the same person.

In treating people in different ways, it is important to be careful that it does not seem like outright favoritism or hostility. The supervisor should, therefore, accomplish his or her goals through applying approaches in private in a one-on-one situation. At times, however, public approaches will be necessary.

The selective approach geared to particular people and situations requires an investment of additional thought, time, and effort by supervisors, but the results achieved far outweigh the costs. ■

Sig Ginsburg is vice president for finance and administration at Barnard College and lecturer in management systems at Fordham University, both in New York City.

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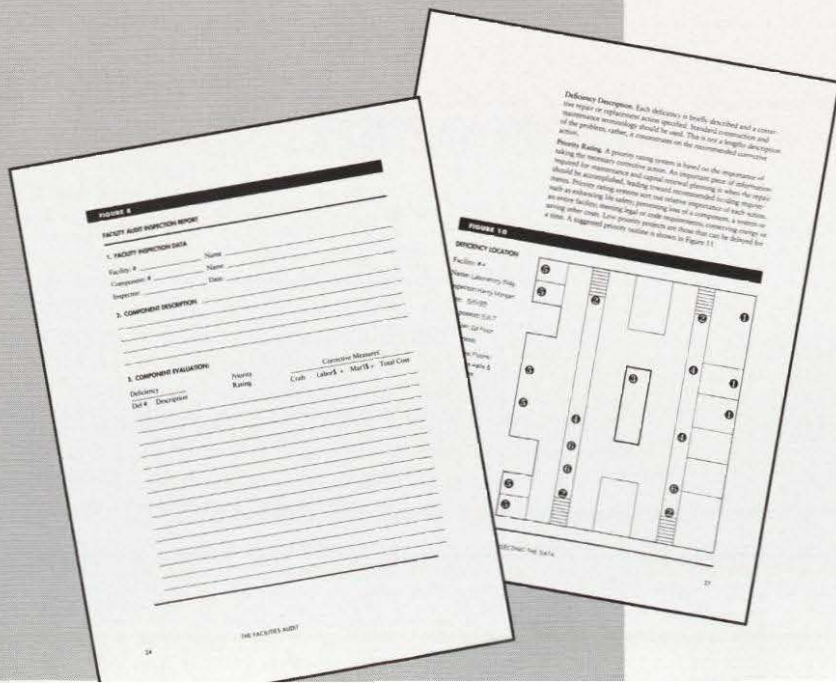
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Perspective

New Tricks For Old Dogs? Learning is Never Wasted

Walter A. Schaw, Ph.D

About three years ago, I was discussing the significance of leadership (in contrast to management) with a long-time friend of mine and former college president. I

Walt Schaw, APPA's executive vice president, recently received his doctorate of philosophy in leadership studies from the Union Institute.

realized that despite a long interest and regular reading on the subject, I really knew very little beyond popular literature and personal, sometimes painful experience. My friend suggested that I go back to school if I was really serious about learning more. I reminded him that being an association executive in an often intensive and demanding environment left too little free time as it is. Typical of him, my excuses didn't alter his opinion.

Thanks to my friend, I took the plunge and signed up for a program designed for non-traditional learners. As someone who had not been in a formal classroom for thirty-five years, I certainly fit the definition. Many hours later, and a new degree behind me, I realized I gained much more than I expected. No learning is ever wasted.

All the same, it was a jolt to be lectured to and criticized as though I were an eighteen-year-old freshman. If you think board meetings can be tough, try being tested in an oral examination on the scores of books and articles you were required to read. I was somewhat

prepared for what was coming from an early lecturer who warned, "If you choose to be a scholar, you will not only accept criticism, you will welcome it!" (At the time I thought to myself, "No wonder academics seem to be such a pain at times. They are trained that way.")

I rediscovered the world of formal study, of disciplined, extended learning. I learned not only to offer opinions,



including those based on experience, but to find research validated by repeated results on which to base those opinions. (Opinion unsupported by data and not subject to validation by formal testing is simply opinion.) A few sharp remarks by a faculty person and I soon learned the difference.

I also learned to look for evidence of research in appendices and extensive bibliographies. Given more literature than one can absorb, you learn to be selective and critical at the onset, especially when you are buying a book. You will also gain a new appreciation and respect for inter-library loan services and the wonderful help that librarians are so willing to give in defining and searching through literature. I had forgotten so much of how to use a library.

One of the hardest parts of learning was realizing, after being pounded by faculty, that I had to study and become as familiar with researchers and

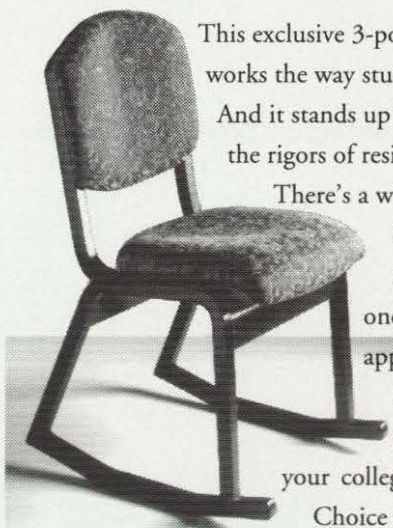


authors with whom I disagreed as with those I liked. That was a chore, but it was critical to real learning.

Fortunately, I was required to experience what was called "interdisciplinary learning," introducing both new perspectives in my field of study (such as international and cultural differences and similarities) and areas quite different from my field. How wonderful it was to see the play *Richard III* and discuss it with a drama coach from an area university both before and after the performance.

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hypothesis of a feminist scholar about "the feminine divine" or to have the opportunity to vigorously but respectfully debate the role of philanthropy with a person of color who regarded it as "tokenism."

Throughout the years of my graduate program, I began to feel more mentally acute than I had in a long, long time. Just as the body requires exercise, I came to appreciate that the same is true of the mind. Most of all, I began to see my own ideas, even more than those of others, from a critical perspective.

The most "fun" in a formal learning experience comes from an opportunity to do research, following my coursework and familiarity with a field of study. There are a number of ways to validate an idea or hypothesis, but the acid test is the same. Will someone else replicating my work come up with the same or similar result? If you enjoy "playing detective," the findings from research often lead to still other ques-



tions to be explored. It may seem to never end, but satisfaction comes from knowing that perhaps, in some small way, you may have contributed just a bit more to a body of knowledge.

Now that I've completed my original course of study, people ask whether it's benefited me on the job. My new skills as well as my knowledge are already serving my work in ways I did not appreciate before. Perhaps more important than any immediately tangible result has been my reawakening to a new world of possibilities that are so readily available to all of us if we are willing to make the commitment of time and energy to benefit from new learning. I'm already thinking about preparing for a new, post-retirement career that I would have never thought about before.

Continuing to learn is part of being alive. Going beyond the self-imposed boundaries of career, time, and even money, there is a whole world to be explored. At age 58, I can say for certain that it's never too late to teach an old dog new tricks. My inspiration was a

68-year old woman who entered the same course of study as I and is also completing in record time.

In closing, may I suggest that making a commitment as I did to giving up most weekends, many evenings, and some holidays for more than two years

is a bigger bite than you might be ready for. But why not take one course in something you've always had an interest in but never pursued. It certainly doesn't have to be job related. But be forewarned, you may enjoy it so much that you'll want more, much more. ■



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Training America's Workers: *A National Perspective*

by David S. Byer

Illustration by Sarah Johnson

There's much ado about training these days. The topic has captured the attention of corporate America's top management, leaders of the labor movement, and even higher education institutions—the major sectors of our society. It is now well-documented through such landmark reports and studies as *Training in America*, *America and the New Economy*, and *America's Choice: High Skills, Low Wages* that raising the skills of America's work force is a fundamental element of improving the nation's global competitiveness and productivity.

This news probably comes as no great shock to you.

But what *is* news is that the promise of training, and what it can offer employers and their employees, has tickled the fancy of official Washington—and Washington likes to act on its fancy.

Special emphasis is given to the “policy” side of training. That is, President Clinton and Congress, as well as many state legislatures, plan to unveil a host of new training-related proposals and measures in the coming months that could begin to fundamentally alter how corporate America on down to the smallest of businesses and nonprofits view training. Institutions of higher education will not be left out on this one.

In today’s increasingly “high tech” world, our nation’s political leaders are opening their eyes to the fact that training America’s workers, particularly non-managerial employees, is something that can no longer be considered simply as a cost of doing business. Providing the necessary and appropriate training is as important an investment as the purchase of any whiz-bang piece of equipment or new-fangled plant.

No matter what happens to President Clinton’s formal proposals during his term in office, rest assured that he will use the “bully pulpit” of the presidency to hammer home an unalterable tenet: “The only way America can compete and win in the twenty-first century is to have the best educated, best trained work force in the world.” And Congress will be there too, providing Clinton with the nails.

It is precisely because of how the policy element of training is rapidly coming to the fore of America’s political conscience that today’s modern facilities officers should take heed. Given the uniqueness of your responsibilities, you could be the primary beneficiaries, as well as campus-based leaders, of the accelerated training movement. And don’t be too surprised when you start hearing more about such workplace restructuring concepts as total quality management, continuous process improvement, or workplace change and reorganization. These are the management strategies that in the 1990s will drive productivity in the workplace. And how workplace productivity is defined—an important role of campus facilities officers—begins to determine the specific training workers will need.

Why Training Is Important

Few members of Congress and other top officials in Washington refute the need to improve the skills of the American work force as one of the critical elements of our national commitment to revitalizing the U.S. economy and regaining competitive advantage in the global marketplace.

The complex economic challenges facing Congress and the new administration in its early days are focusing greater attention on worker training issues. For example, the conversion from defense to civilian production will increase training needs, particularly for the thousands of workers facing the loss of their jobs. Prospects for new trade agreements will intensify global competition, forcing an expansion of training to match the acceleration of technical and economic change that global competition stimulates. New tax incentives, an

emerging “technology policy,” and other infrastructure investments will trigger an avalanche of demand for workers in all occupations who are skilled in a vast array of technical processes.

But the benefits of training are not limited to improving economic growth. Worker training has a more powerful impact on earnings than any other kind of learning, including higher education. Access to job training increasingly determines career opportunity: workers who receive training on the job subsequently earn over 20 percent more than similar workers who do not receive training.

Too Few Workers are Adequately Trained

Despite its clear advantages, not enough worker training takes place in America. Although U.S. employers spend about \$30 billion a year on formal worker training, that amount reaches only about 7 percent of the work force. Stated even more dramatically, 90 percent of all job-related training occurs in only 15,000 companies (usually the largest), representing less than 1 percent of all U.S. businesses.

The result is that nearly 50 million workers today will need additional training just to keep pace with the changing skill requirements of their jobs, let alone gain skills in new areas.

.....
President Clinton and Congress plan to unveil a host of new training-related proposals and measures in the coming months that could begin to fundamentally alter how corporate America views training. Institutions of higher education will not be left out on this one.

Looking at just one sector—manufacturing—an area that shares many similarities to today’s campus facilities operations—more than 15 million jobs will require more advanced skills in the next decade than they require today.

The problem is particularly acute for the nation’s 5 million small- and medium-sized businesses, another sector that many campus facilities management departments—and some small colleges—resemble. Small businesses often lack the financial resources, time, or experience to help their workers gain even basic remedial skills.

The training that is available in the United States is often misdirected or unevenly distributed, with white collar managers and other technical professionals receiving the overwhelming share. Not enough skill development has been focused on production and service personnel, or on the other blue collar nonsupervisory workers who make the products, deliver the services, and serve the customers. Of the \$30 billion for formal worker training, only one-third is spent on our nation’s non-college educated, front-line workers.

David Byer is national affairs representative for the American Society for Training and Development, Alexandria, Virginia

The problem is exacerbated by the fact that industrial and workplace modernization cannot succeed without a work force capable of mastering far more sophisticated tools, techniques, and processes than are currently required. This, as you are well aware, is increasingly true for facilities officers and their employees.

As the number of U.S. corporations, postsecondary institutions, and other businesses committed to high performance and quality rises, the demand for workers with advanced skills also increases. The total quality movements on many campuses today reflect this emphasis on high performance and quality.

Impediments to Training America's Workers

If the benefits of worker training are clear, and the need so evident, why are not more businesses or universities investing in worker training on their own? The answer, in fact, is that more employers than ever are providing their workers with better training. The problem, however, is that much more is needed and too many impediments associated with worker training still exist.

First, training can be quite expensive. The employer usually pays both the training cost plus the cost of the employees wages due to lost time on the job while being trained. (Only the largest and most advanced companies can afford to spend more than 1.5 percent of their payroll on worker training.)

Second, it is difficult for employers to assess the benefits of their investments. The principal beneficiary of training is the worker, who can use the training to get new and better employment. The employer must justify training on the grounds of the value added to overall productivity, which is harder to quantify.

Third, many employers are reluctant to train due to high labor turnover, especially within small companies. Employers are wary that, once trained, the newly skilled worker will be lured away by competing companies offering higher wages.

Additional Federal Investment in Training is Needed

Currently, little federal assistance exists for worker training. The federal government currently requires health and safety training in specific high-risk industries, provides training opportunities for job-seeking youths and the socioeconomically disadvantaged unemployed, and provides income support, job search assistance, and retraining for economic- and trade-displaced workers. One popular training tax incentive, Section 127 of the Internal Revenue Code, which offered a credit for employer-provided educational assistance, was allowed to expire at the end of the 102nd Congress.

As these problems illustrate, the need for greater investment in the skills of America's workers is not a purely private sector issue. While the private sector must remain the primary actor, it will also take specific federal action to level additional worker training.

More than 70 percent of those who will be working in the year 2005 are already on the job. As this and the other statistics demonstrate, there is a compelling need to think through

a national policy that can stimulate critically important private sector investment in training to improve the skills of America's workers.

Clinton Administration Initiatives on Job Training

High on President Clinton's agenda is convincing the nation to invest substantially more in the skills of America's workers and promote quality in the workplace. The route to building a robust U.S. economy, he maintains, is through a highly skilled and competitive work force capable of producing superior quality products and services for the rest of the world.

"The workplace of the future will be technology intensive," the president has stated. The nation "must take into account the need to upgrade workers' skills and help people make the difficult transition from repetitive, low-skill jobs to the demands of a flexible, high-skill workplace."

.....

High on President Clinton's agenda is convincing the nation to invest substantially more in the skills of America's workers and promote quality in the workplace.

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The administration would like nothing more than to position lifelong learning, advanced manufacturing technology, work force preparation, and high-performance work as the catalysts for improving the nation's long-term economic health. The Congress, in fact, has already begun to shape many of President Clinton's ideas into legislative proposals.

And despite a grueling first 100 days in office that have often been characterized by difficult battles over the budget and economy, not to mention unforeseen national and world events, the Clinton administration remains steadfast in its commitment to building a national work force investment strategy.

Whether this can be accomplished remains to be seen. What is clear, however, is that the administration is moving ahead—boldly, in many cases—on several fronts affecting training:

President Clinton has proposed overhauling the nation's dislocated worker assistance programs, which include various job training provisions, for workers who lose their jobs as a result of the recession, defense "downsizing," and international trade.

Congress will soon act on a national technology policy that incorporates the president's vision of integrating job training, workplace change, and quality within industrial technology advancement.

Congress must also act this year on the North American Free Trade Agreement, supported in principle by Clinton. The treaty, if approved, could alter the economic vitality of

many U.S. industries, placing a premium on highly-skilled American workers and modern, technologically proficient workplaces.

Clinton is also taking steps to reform American education with a heavy emphasis on a national "youth apprenticeship" system to assure a smooth transition from school-to-work, as well as industry skill standards.

It is noteworthy that the president has dropped, at least for now, the one direct workplace training proposal repeated most often during the campaign. He is no longer advocating publicly a special training levy that would require businesses of more than fifty employees to contribute at least 1.5 percent of their payroll for worker training. It is now viewed as simply unattainable politically.

As work progresses in fashioning specific proposals in the job training arena, Clinton is relying on two influential deputies, namely Labor secretary Robert Reich and Commerce secretary Ron Brown. Each has the president's ear and together they have pledged cooperation in determining appropriate responses to such issues as improving on-the-job training, integrating training within a national technology policy, and working toward the "high performance" workplace.

Some Specifics

To obtain a deeper sense as to how specific job training policies could impact America's workers, including those who are employed by campus facilities management departments, it is helpful to take a closer look at four of Clinton's proposals.

Technology and training. In February, President Clinton unveiled his administration's vision to guide national technology policy. The plan seeks to forge closer working partnerships among industry, federal and state government, workers, and universities by steering public and private sector investments in national defense to the civilian economy.

Among its many provisions, the plan emphasizes the connection between training and advanced technology. It advocates making training accessible and affordable for technical workers who need to upgrade their skills as a result of the introduction of advanced technologies in the workplace or new applications of current technologies.

The president's plan also seeks to create an interagency task force on training technology. The task force would establish software and communication standards for education and training and support innovative software packages and curriculum design. If adopted as proposed, a national technology policy could directly enhance training in a host of technical fields, including those with special relevance to facilities officers, such as engineering and waste management.

Assistance to small- and medium-sized manufacturers. The president's technology policy complements legislation in Congress that would expand the nation's regional manufacturing technology extension programs. The National Competitiveness Act (H.R. 820 and S. 4) extends the scope of federal assistance to the nation's small- and medium-sized manufacturers to help them become more competitive.

The legislation calls for beefing up the nation's highly-regarded manufacturing technology centers (MTCs). Currently, seven federally-supported centers and about forty state-run programs exist (several major ones are located at state institutions). These centers provide hundreds of manufacturing companies with technical assistance, problem-solving tools, work force training, and continuous process improvement assessments.

The National Competitiveness Act also establishes "American Work Force Quality Partnerships" to provide classroom and workplace training grants to help employers best utilize workplace technologies and processes. The partnerships would help link the nation's best institutions of higher learning with private industry efforts to upgrade worker skills.

On the campaign trail last year, candidate Clinton called for increasing the number of manufacturing extension programs to 170 over the next decade, citing their mission as the essential sparkplug for catapulting U.S. manufacturing productivity ahead of foreign competition.

MTCs can potentially offer facilities managers and their workers with direct assistance to help confront the technical or process-oriented problems that arise in the everyday operation of the college or university's facilities and equipment. The expansion of the MTC program more directly in the area of training and development would serve to enhance their overall utility.

Assistance to dislocated workers. The administration has proposed spending \$1.9 billion in fiscal 1994, and \$12.9 billion over five years, to overhaul the current system of programs providing dislocated worker assistance. Replacing it would be a new comprehensive Labor Department program that would provide training, job search assistance, and income support to any individual who has lost a job because of industrial restructuring, defense downsizing, or international competition.

This year's budget also includes \$150 million to establish "one-stop" career centers that would offer career counseling, assessment, occupational information, job referrals, etc., to workers seeking to upgrade their skills.

Additionally, \$159 million would be spent on job training and referral services for recently discharged military service personnel.

As the nation adopts new ways of conducting its business—through greater automation, high-tech processes, advanced information, and communications systems—the demand for workers with high skills will accelerate. Those without such skills could face unemployment.

It comes as no secret that to run the modern campus-based facilities organization requires nothing less than technically proficient workers. The extent to which the nation places a priority on assisting those workers with few relevant job skills could very much dictate our national level of productivity and competitiveness, not to mention the efficiency of an institution's plant and operations.

Industry and occupational skill standards. The Labor and Education departments are working collaboratively to estab-

lish broadly defined skill standards that could form the cornerstone of the nation's work force development system. Skill standards could be designed to drive performance measures and targets for workers and be used by employers as a basis for rewarding their employees. The two key principles in the establishment of skills standards are that they be voluntary and designed with private sector leadership from both employers and employees.

Here again is a proposed policy with direct application to the facilities management department. Under this plan, facilities officers would have, at their option, industry and occupational data to help identify which skills and experiences are best combined for successful performance on any given job. Candidates for openings would, at minimum, have to be matched against the standards and competencies established for that particular job.

Conclusion

The reality of the policymaking process in Washington, DC, and in the statehouses around the country, is that change most often occurs slowly and deliberately at best. This is especially true in the era of looming budget deficits. That the issue

of increasing training for America's workers is even on the policy radar screen is an achievement of no small measure.

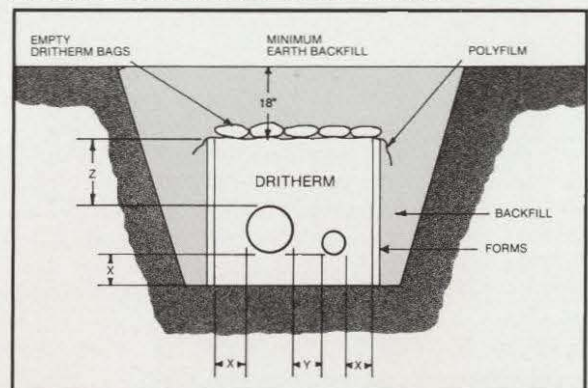
But no matter what happens in Washington, you will be left to live with the consequences. Because we already know that the drive for productivity, whether in the world of the postsecondary institution or at a Fortune 100 company, requires workers with finely-tuned skills, developing and implementing a long-term workplace training strategy for your facilities management department makes good sense, economically and professionally.

It will not be an easy undertaking, however; few valuable activities are, of course. The risks of not investing in the skills of your workers are growing daily as the world of work increases its dependency on advanced technology and production systems, automated processes, and rapid-fire information.

Perhaps the best, and clearest, argument for increasing worker training can be made by posing the simple question: "What's the alternative to not training more?" Official Washington, at least, is beginning to recognize the answer to be: "Not much that is good." Washington may be on to something. ■

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Module 4: Basic Labor Relations

Module 5: Goal Setting/Keeping People
Informed

Module 6: Communicating: Instructing
and Ensuring Mutual
Understanding

Module 7: Situational Leadership

Special Preview

Review materials from the first module and find out more about the program at the Annual Meeting. Special "Hot Topics" session on Sunday, July 25.

Skilled-Craft Training for Tomorrow

by Robert K. Beck III

In this era of tight budget dollars coupled with the constant challenge of doing more with less, how does an organization maximize its craft training resources? At the Purdue University West Lafayette campus, the first step taken to tackle the tremendous challenge of providing relevant training to thirty different job classifications began with top management's philosophy and support for skills training.

Management Support

Our former as well as our current vice president (Ken Burns and Wayne Kjonaas, respectively) view craft training from a long-range perspective. The bottom line is that in order to ever be able to do more with less, including fewer people and fewer dollars, one must develop and maintain a work force that is skilled to do more. In order to attain a more skilled craftsman, he or she must be trained not only in their primary craft, but also remain up to date regarding the use of newer and more effective tools, materials, and work processes.

Such goals, to a large extent, can only be attained through quality structured training. Previously within our physical facilities department the mainstay of our craft training revolved around OJT (on-the-job training), which translated to "Follow Joe." As our vice president has put it, "Unstructured OJT means No JT." What he is really saying is this: as each generation of craftworker learns what his or her mentor remembers to share with them, eventually over the course of time there is not a whole lot of knowledge or skill transfer taking place. The director of buildings and grounds, Don Hufford, has recognized this dilemma for years, especially since his background included formal experience as a trainer in the custodial and OSHA disciplines.

With management support from the two top levels of the plant firmly established, a plan to develop a comprehensive and structured training framework was generated.

The Plan

Before any actual training could even be planned or identified, a foundation had to be put in place. Our foundation became known as Skills Inventories. A skills inventory for our purposes consisted of a list of all of the significant tasks that a craftsman must be capable of performing on the job. For each shop craft we have four progressive levels from trainee to tradesman to first-line supervisor (crew chief). A skills inventory was developed with input from both employees and supervisors for each craft and every job level in each craft. This was a major undertaking to be sure. However, it was accomplished through a cooperative partnership with our industrial technology department right on campus. We employed a graduate student each year and at the end of two years we had completed a skills inventory for not only every shop craft, but for all of the grounds department job classifications as well! A partial sample of a skills inventory for a carpenter trainee can be seen in Figure 1. Yes, we have job descriptions in our plant; however, they are so broad and general they tell you everything you should do, yet provide few or no specifics. Our Skills Inventories were developed for use in identifying what a tradesman should know and be able to do, as well as for use in providing specific performance appraisal feedback, pay and promotion decisions, and above all else, for use in identifying training needs.

Bob Beck is buildings and grounds training manager at Purdue University, West Lafayette, Indiana.

FIGURE 1
FACILITIES SERVICES DEPARTMENT
Structural Section
SKILLS INVENTORY
Level 6 Carpenter Trainee

NOTE: The purpose of the date and initials block is to document the fact the employee has exhibited the required/appropriate behavior on the job. However, these behaviors are to be demonstrated daily even after sign-off status has been achieved on the respective items.

1. Learns to construct and repair structural woodworking including:

(date____)(initials____)	J. Trim/Moldings
A. Building framework	(date____)(initials____)
(date____)(initials____)	K. Doors
B. Partitions	(date____)(initials____)
(date____)(initials____)	L. Windows
C. Counters	(date____)(initials____)
(date____)(initials____)	M. Stairs
D. Doors	(date____)(initials____)
(date____)(initials____)	N. Storm windows
* 2. Learns to install	(date____)(initials____)
(date____)(initials____)	O. Screens
A. Batterboards	(date____)(initials____)
(date____)(initials____)	P. Fixed acoustical tile
B. Footers	ceilings
(date____)(initials____)	(date____)(initials____)
C. Framework	Q. Window air conditioners
(date____)(initials____)	(date____)(initials____)
D. Foundations	R. Floor tiles
(date____)(initials____)	(date____)(initials____)
E. Bases	*3. Learns to frame metal
(date____)(initials____)	(and wood when necessary)
F. Drywall	(date____)(initials____)
(date____)(initials____)	A. Laying out
G. Contempo	(date____)(initials____)
wall/Steelcase wall	B. Shaping
(date____)(initials____)	(date____)(initials____)
H. Panel partitions	C. Assembling
(date____)(initials____)	(date____)(initials____)
I. Metal stud partitions	D. Erecting
(date____)(initials____)	(date____)(initials____)

With the skills inventories in place, five major training goals were identified. The first was to provide each craft employee eight hours of structured training (above and beyond the customary OJT) on an annual basis. The structured training consists of a combination of both classroom (knowledge based) training and OJT (skill based). The key to structured training is that each program have

- documented, supported content;
- clearly defined, specific, and measurable learning/skill performance objectives;
- each trainee's skill performance and their knowledge

comprehension be measured and documented;

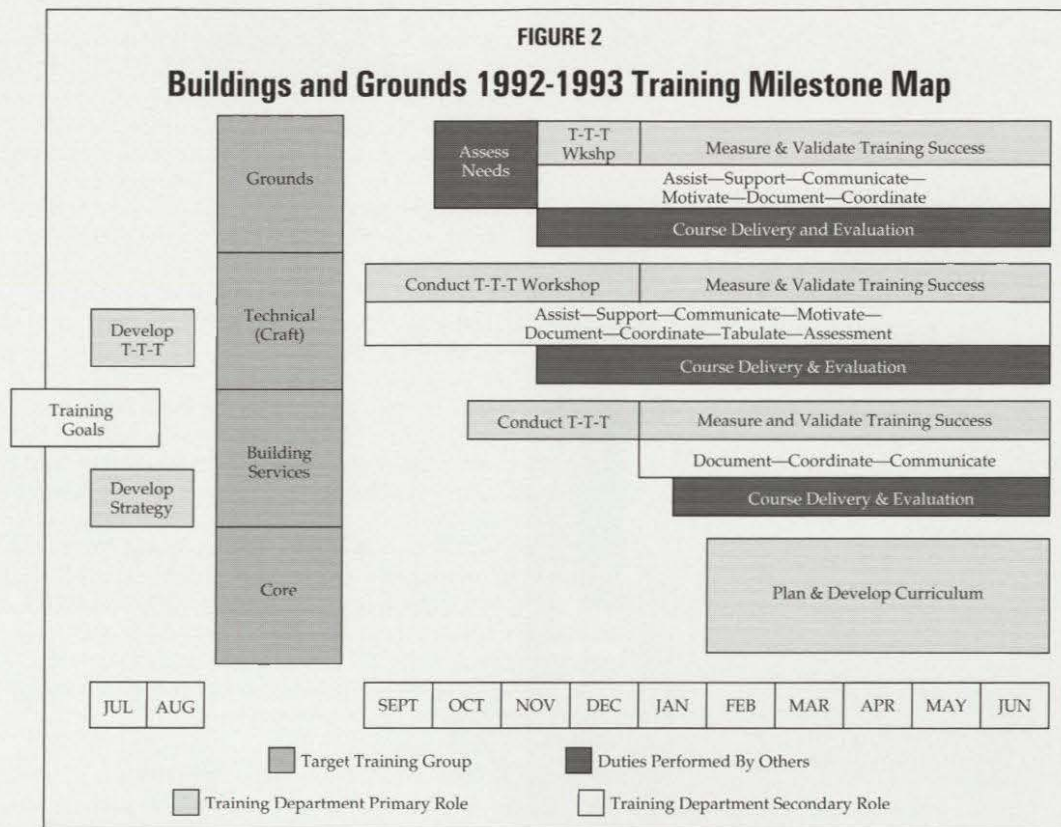
- feedback to trainee, trainer, supervisor, and management regarding training results.

The second goal was to generate training programs with both employee and supervisor input. Third, establish training administration guidelines for all crafts. The fourth goal was to identify and develop core training programs for all new hires and trainees. Fifth, provide eight hours of structured training for each employee within the grounds department. The divisions we provide training services to consist of building services (custodial services), grounds (landscape maintenance), and facilities services (shop crafts).

The eight-hour benchmark for each employee was just that—a goal that was established for our first year of providing structured training. So it is for almost every organization, budget constraints greatly influence the amount of time we can afford to fund training. We hope to increase this benchmark each year as long as identified training needs justify “additional” resources. These goals in and of themselves on the surface may not sound too impressive, but let me share with you some numbers in an attempt to illustrate the true magnitude and ambition this plan represents. There are 700 employees spread out among thirty different shop crafts and job classifications. Industry experts (Hawthorn, 1987) estimate that documenting, researching, and developing a structured training program containing the elements noted in the first goal requires about forty hours of development time for each one-hour program. This does not include time and resources necessary for clerical support, printing, graphics, preparation, etc. In other words, to achieve this first goal with a one-person training department could take years. It became painfully obvious to everyone that in order for our department training to move beyond a reactive mode and become proactive, additional training resources would have to be made available.

At Purdue our primary additional resource was the employment of Rita Finch as an instructional design specialist. Finch came to us from local industry and has been a unique complement to the department not only due to her professional skills training experience, but also because she is a journeyman millwright mechanic. Her role is to work with the subject matter experts in the crafts and to translate their knowledge and experience into training programs. Clearly, the action of adding a staff member to the training function in the midst of hard financial times reflects on the extent of management's foresight and commitment to developing a skilled work force within physical facilities at Purdue University.

In spite of the added resources and commitment to training, a two-person training department still has its limitations. For example, Figure 2 reflects the timetable and major milestones or goals that were established and targeted for completion during fiscal year 1992-93. Creative alternatives for completing the four phases of the training development process had to be identified in order to meet the timetable established in our Training Milestone Map.



Four Training Phases

The four training phases are training needs analysis, design, delivery, and evaluation. With respect to identifying the training needs of our employees, the skills inventories were utilized extensively by both supervisors and employees to target specific knowledge and skills training needs. Additionally, through our campus contacts we established a collaborative relationship with professors from the organizational leadership and supervision department, which enabled us to draw upon free student help while providing the students with real-world training experience.

The students conducted a training needs analysis in the grounds department and, as time went on, even began producing training videos in both the grounds and carpentry craft areas. To date, four professional-quality training videos have been completed. Students also carried out special training needs analyses in the craft shops, as well as surveying all of our foremen for their input on programs and content for the core curriculum.

The most powerful and efficient way to tackle the training design and delivery phases was to develop an in-house train-the-trainer workshop for all of our foremen, crew chiefs, and volunteer journeymen. The workshop emphasized structured OJT as the focus for future training and used a standardized training design format. This provided a consistency in training quality and structure that would prevail throughout the different shopcrafts. The goal was to ensure that all craftspeople would receive the same caliber of training and were provided a common approach to training design and delivery

that was user friendly and comprehensible by both trainee and trainer alike.

The train-the-trainer workshop was conducted in small groups of no more than five participants per workshop. Each workshop was approximately twelve hours long and was conducted for two-and-a-half hours a day for five consecutive days. This small group workshop provided the necessary one-on-one attention for each participant and allowed sufficient time for in-class hands-on exercises. Trainees learned how to design, develop, and deliver skills training by actually performing each of the workshop tasks.

Figure 3 is the actual unique training design checklist that was used to train participants in the training design and delivery phases. Prior to attending, each workshop attendee was required to identify a training need for their respective

shop employees and in turn began developing training for that specific topic throughout the course of the workshop.

Following the formal workshop, each participant was required to deliver a fifteen-minute segment of the training program that they had developed for their fellow workshop participants and, of course, for the instructors as well. Verbal feedback was given to each trainer following their presentation, and written comments from the instructors followed later. This mini training demonstration was essential to ensure that each participant had in fact mastered the basics of the design checklist. Each successful trainer received a certificate of achievement and was recognized and applauded for their accomplishment at a monthly supervisor staff meeting.

There were sixty-five participants who enrolled and successfully completed the workshops, which took more than six months to complete. Workshop attendees rated the training they received very positively. For example, 45 percent of the trainees gave the course an "excellent" rating, 48 percent of the trainees rated it "very good," and 11 percent rated the workshop as "good."

The primary emphasis of the workshop was to get subject-matter experts who deliver training to get their trainees involved, and then provide hands-on learning opportunities. Participants were trained to perform skill checks to ensure that trainees not only understand the how to's and why for's about a task, but to physically perform the new skill according to prescribed performance standards. Instead of using the emotional buzz word "test" with regard to training, we

employed the term "skill check" as a more positive and pleasant concept. Rather than test a trainee for their knowledge and skills understanding, we skill-checked them.

FIGURE 3 BUILDINGS AND GROUNDS DESIGN CHECKLIST

The following is to be used in the design of all technical and work-related courses. As you develop course materials for a specific topic, follow this format.

INTENT

- Give your topic a title.
- State the intended objectives.
- Identify skill-check conditions.

CONTENT

- Sequence intended objectives.
- Divide each objective into skill levels.
- Develop course content (step-by-step).

ACTIVITIES

- Select training methods.
- Select training media.
- Develop demonstrations and skill checks.

COURSE IMPROVEMENTS

- Complete training evaluation forms.
- Provide Training Department with copy of course materials.

Following the workshop, our subject matter experts were then expected to complete the development of their respective training programs and schedule a delivery date for their training event. Both members of the training department and clerical support staff provided consultation and assistance to each "trainer" as needed. Support by way of scheduling programs, facilities, developing handouts, flip charts, overheads, etc., was available to anyone who requested it.

Results

So what new training actually resulted from all of this effort? The results are impressive. The implementation phase of our training development process can best be appreciated by glancing at Figure 4, which contains the course schedule for our first year's training launch. Following each training program, trainees are asked to complete a trainee course evaluation that asks questions about the skills and information learned, hands-on exercises, training materials, methods, and the trainer's presentation. These evaluations are tabulated and the summary results are then fed back to the trainer. Training staff follows up with trainers if feedback from the trainees warrants such contact.



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In addition to measuring trainees' reactions toward training programs, our instructional design specialist conducts training audits with each person who attends a training session. The training audit is a brief, anonymous questionnaire sent to each trainee approximately two to three months following their attendance in a scheduled training program. The purpose of the audit is to measure how effective the program has been. Trainees are asked what they learned in the program that they have been able to practice on the job, as well as what they have been unable to use from the program or course. A total of four questions are asked of each respondent. This information is critical in determining whether we are in fact meeting our employees' training needs. Our employees are our customers; therefore, we want to provide them with a quality training product.

FIGURE 4
1992-1993 BUILDINGS AND GROUNDS COURSE SCHEDULE

Date	Course Title	Trainer
11/11/92	Overview of AMPS	Bob Cornell
11/20/92	1993 NEC Changes	Bill Siersema
12/03/92	Performing Annual Safety Elevator Checks	Hollis McManaway
12/09/92	HydroPulse Boiler Maintenance	Ron Moll
12/17/92	Proper Battery Maintenance-Auto Scrubber and 2000 Burnisher	Larry Sackett
01/05/93	Using The Elevator Inspection Checklist	Curt Ewing
01/20/93	Miller Water Cooled Resistance Spot Welding	Chuck Zink
02/03/93	Procedures For Properly Conducting Roof Inspection	Holly Kenworthy
02/04/93	Safe Shoring Practices and Procedures	Bret Turner
02/08/93	Combination Safes: Hand & Key Change Locks	Dale Hickman
02/11/93	Hearing Protection On The Job	Kurt Stull
02/19/93	Operation & Maintenance of Air Compressors	Rick Carter
02/22/93	Procedures For Responding To Work Requests	Mike McClure
02/24/93	The Table Saw & The Third Hand	Darrell Burton
03/08/93	Impressioning Keys	Randy Copas
03/09/93	Fabrication/Installation of Ductwork	Don Jackson
03/11/93	Maintenance/Repair To Electrical Motors	Leo Schmidt
03/18/93	Procedures For Proper Surface Preparation	Steve Fader
03/19/93	Calibrating a Johnson Thermostat	Steve Critser
03/24/93	Compressor Capacity Controls	Tom Ladd
03/26/93	High Pressure Sodium Fixtures	Jim Polley

03/27/93	Using The Elevator Inspection	Kurt Ewing
04/01/93	Manlift Operation and Inspection	Carl Chafin
04/01/93	Basic Pool Chemistry	Brian Siler
04/08/93	Rolling Tower Procedures & Policies	Dean Jones
04/16/93	Safely Using The Jointer & Thickness Planer	Ken Roswarski
04/16/93	Customer Service and Value	Lew Graham
04/16/93	Float & Thermostat Steam Trap Maintenance	Jerry Smith
04/16/93	How To Conduct a 10 Year R and R Survey	Jim Albregts
05/06/93	Proper Identification of New Doors & Frames	Butch Livingston
05/06/93	The Win/Win Team	Chuck Anderson
05/10/93	Soft Soldering Copper Tubing	Randy Conwell
05/19/93	Mobile Aerial Device Operation & Maintenance	Dan Dunbar
05/23/93	Overview of Refrigeration Components	Al Snider
05/26/93	Estimating & Procurement of Paint Shop Job Materials and Equipment	Kenny Seamans
06/02/93	Installation of Ring Packs in Chill Water Valves	Dave Yanner
06/05/93	Listening Techniques	Joel Zarate

Note: There are four additional courses to this schedule that will be offered by individual request only.

Where Do We Go From Here?

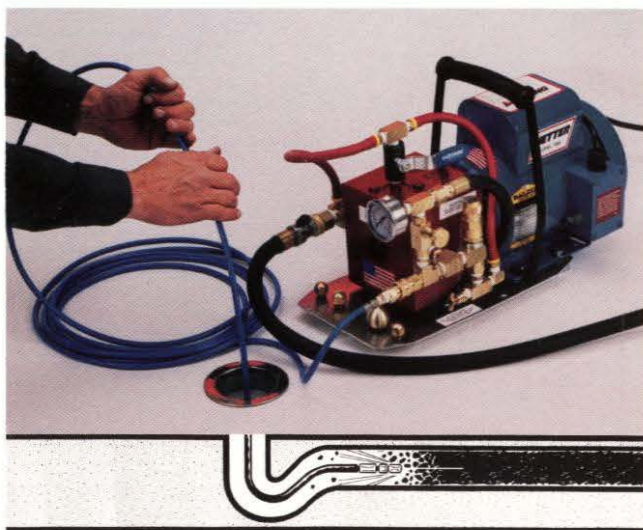
The effectiveness and value of training being delivered is critical to the bottom line of both the organization as well as the training department. It is our intention to evaluate the impact and effectiveness of our training so as to be able to eventually provide documentation to management on the return on investment of the training being provided. This fiscal year we emphasized the merit of the training delivered by measuring trainees' reactions. Our focus next year will be on the worth of our training, which emphasizes the transfer of learning to the job. We plan to link our training to the greater organization's mission and goals as well.

Without question, we have come a very long way in a short amount of time. The critical key to our success has been management support from the beginning. Second, the train-the-trainer workshop enabled our highly skilled and knowledgeable foremen and tradespersons to provide quality structured training to our employees. We utilized a bottom-line, nuts-and-bolts approach to the process of developing training, and it has been met with positive reactions and results from all who have participated.

By equipping subject matter experts with training development skills, employees can be trained more efficiently to perform more effectively, and the organization is then able to do more with less! ■

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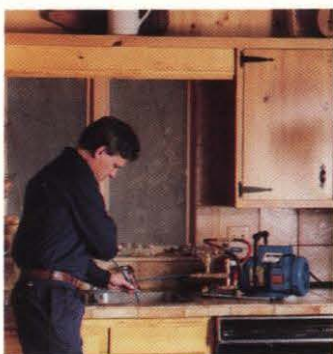
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THE CHALLENGE OF APPRENTICESHIP TRAINING

Facilities organizations are facing many challenges as we approach the year 2000. As a result of changes in labor force demographics and dramatic changes in technology, a key challenge for the University of Maryland is that of recruiting, retaining, and training skilled mechanics.

Apprenticeship is one strategy available to us as we meet this challenge.

Beginning in 1983, the university's department of physical plant began a formal apprenticeship training program to meet the needs of our work force.

A Look Back and a Look Ahead

The most famous apprentice in America was Benjamin Franklin. When Ben was twelve, his father took him around Boston to look at different vocations so that Ben could become an apprentice and a master craftsman. Ben began as an apprentice printer. He was but one more trainee in a cycle that began in the Middle Ages.

The English Statute of Artificers (1563) stated that parents, unless they could demonstrate the means to educate their

sons for business or the professions, were required to bind them either to a trade or to agriculture.

Apprentices were to serve seven years, with a term ending sometime between ages twenty-one and twenty-four. The seven-year term was considerably longer than the three to five years that prevailed in Germany and France. This was to ensure English supremacy in handmade manufacturing (Rorabaugh, 1986).

One of the most recognized apprentice programs in the world today still operates in Germany. Its recognition is due to the low unemployment rate for young adults, which is primarily attributed to a combination of in-company training and part-time vocational schooling. The notion that employers have social obligations to fulfill by training apprentices may seem idealistic, but apprenticeship is viewed as an entitlement of young people as much as schooling, and employers are seen as obligated to provide that part of the vocational training.

In 1984, a study entitled *Report on Vocational Education* stated, "Germany looks at the apprentice program as a way to strengthen the competitiveness of the Federal Republic while fulfilling a social obligation to its citizens." West German Chancellor Helmut Kohl had made a campaign promise that all applicants would be able to find an apprenticeship, making the shortage of apprentice placements a hot political issue.

Wallace Glasscock is assistant director for human resource management, department of physical plant, at the University of Maryland, College Park, Maryland.

APPRENTICESHIP

by
Wallace E.
Glasscock

Apprenticeship on a National Scale

President Clinton has stated that he would like to adopt a similar program to the one in Germany. He made this clear when asked by the American Vocational Association to present his view on education reform and especially vocational education. "As president, I will establish a National Apprenticeship Program that will enable high school students who aren't bound for college to enter a course of study designed by schools and local businesses that will teach them valuable skills with the promise of a real job—with a growing income—when they graduate."

This plan has been backed by the administration's proposal of \$270 million for a new youth apprenticeship initiative as part of an \$18 billion training package. President Clinton reiterated his commitment to vocational training in a commencement address in May.

Changing Needs in Changing Times

One of the major crises facing facilities departments today is the availability of qualified skilled workers that is so necessary for the survival of our campus facilities. With the introduction of hand-held computers, direct digital controls, electronic tools, and advanced equipment in all trade areas, finding qualified skilled workers becomes vital to our success. Our most valuable resource (our employees) must be quali-

fied to work with the tools of their trade, which are changing daily.

With competition from private industry, usually offering higher starting salaries, and the statistics of *Work Force 2000*, we find ourselves recruiting from a potential work force of employees from a country other than the United States where the first language is something other than English. These challenges and opportunities are but a few of the many problems facing facilities organizations during the recent "lean" years of budget cuts and staff reductions. It has become increasingly more difficult to recruit qualified and trained mechanics for work in the trade areas.

In 1983, the University of Maryland Department of Physical Plant was faced with the prevailing problem of hiring qualified trained mechanics in many of the skilled trade areas. With a total staff of more than 700 employees, 250 in the trades area, the need to recruit qualified applicants was vital. The work force was made up of many employees who had fifteen to twenty years of seniority or more. These were employees with proven experience and skills. However, there were not enough entry-level employees who would take the place of the skilled worker in the future.

The entry-level wage for the beginning mechanic was below the level being paid in the metropolitan area where the university is located. Although many different recruiting

techniques were tried—advertising, recruiting friends and family members, requesting to hire above entry-level wages, conducting job fairs, etc.—the efforts were often without success. Since the university was part of a salary system that had set entry-level wages (making it difficult to offer competitive wages), it became evident that a different approach was needed to fill vacant positions.

Apprenticeship Costs and Benefits

Recruitment was not working for us in the trades area. A qualified apprenticeship program enables us to “train our own” and develop the type of employee we want for the future.

From a cost perspective, savings first occurred by hiring a trainee. A first-year apprentice enters the program at 67 percent of the mechanic's salary. An increase in salary is granted each six months instead of the normal twelve months, if attendance and related education grades are above 90 percent. Apprentices must work 1,600 hours each year to meet the requirements of the program and to remain in it as well as to be considered for promotion. They must also complete 144 hours of related education hours each year. After four years the trainee will be graduated to the entry-level salary of a mechanic.

The apprentice may advance more than one level each six months if performance is exceptional and if the supervisor and the manager of the program provide positive recommendations. Similarly, the apprentice may be held back for a six-month period or more if progress is not satisfactory. An additional benefit occurs since the trainee will be motivated to perform well in order to prove that they can do the job of a mechanic. Key to this performance is the support of the mechanic and the training area supervisor. Through their on-the-job training and hands-on experience, the supervisors make the difference in the success of the trainee.

If an apprentice can be hired for an existing position that has funding, the cost for training becomes the primary issue. Instructor salaries, books and equipment, and transportation are important factors. The university budgets monies for instruction each year based on the number of trainees and the areas where training will occur. For example, if we have to hire one instructor for one trainee, it becomes an expensive process. Planning for the next two to four years for retirement and promotions in each shop area are valuable tools for controlling instructor cost. We have found that a range of \$20 to \$35 per hour is required to hire instructors. These have been contract positions without benefits.

What Works for the University of Maryland

The present program is made up of three parts:

- Co-op Program (cooperation between school and work)
- Apprenticeship Program
- Related Education

Cooperative Education

The department of physical plant works closely with local

vocational high schools for recruiting and cooperative training purposes. We search for students who have completed their junior year, are interested in one of our apprentice training programs, and have taken one year of class work in that area. Using student interviews and recommendations from their instructors, a student will be hired and work full-time during the summer between their junior and senior years. The successful student will be retained for the senior year of high school as a co-op student and will be allowed to work up to twenty hours a week. This allows the trainee to look at the occupation and the vocational area, but it also allows the department to evaluate the trainee for possible hire into the apprentice program. Co-op is a valuable recruiting tool and is critical for the purpose of evaluating the trainee prior to full-time employment.

Apprenticeship Program

The apprenticeship program at the university involves the following trades:

- Air condition and refrigeration
- Carpentry
- Plumbing
- Electrician
- Locksmith
- Steamfitting
- Temperature (HVAC) controls
- Automotive mechanics

Proposed and in-development stages for federal and state approval include the following:

- Illustrator (sign shop)
- Central steam (stationary engineer)

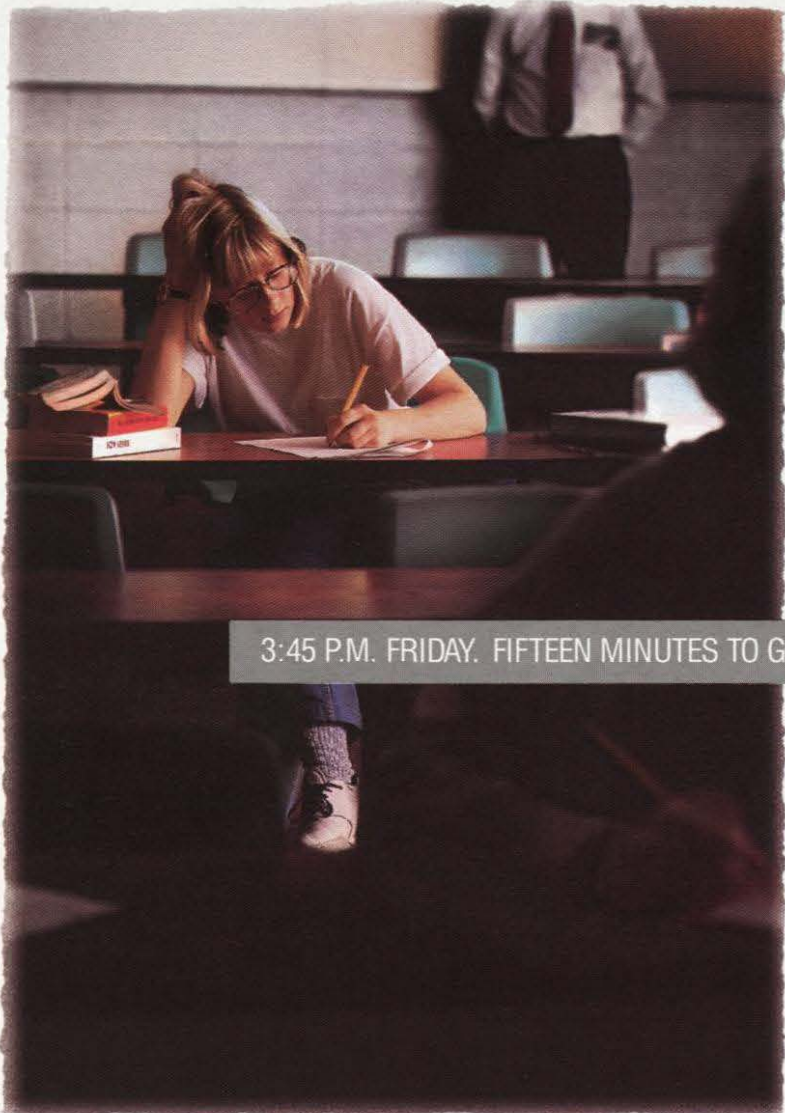
A four-year curriculum program has been developed in all of the above areas. Much of the curriculum has been written in-house, while some has been purchased from outside vendors.

The apprenticeship program is certified by the Maryland Apprenticeship and Training Council and is recognized by the U.S. Department of Labor, Bureau of Apprenticeship and Training. After successfully completing four years of training, the apprentices receive a certificate that indicates their accomplishment. This certificate is nationally recognized.

Recruiting is continuous, but January kicks off the real effort for each coming year. Each vocational school is told of possible openings, and more than 250 notices are sent out by April 1 to the immediate area. Each person who applies for the program is interviewed. Depending on the response we may schedule two interviews, one for initial screening and a final interview for selection. More than 100 applications have been received most years. After selections have been made, the new class begins work during the first part of July.

Standards are set for all apprentices at the beginning of the training. Each apprentice must attend 90 percent of all classes and have more than 90 percent work attendance before they

Continued on page 32

A photograph of a female student with glasses and a ponytail, wearing a light-colored t-shirt, sitting at a desk in a classroom. She is leaning her head on her hand and writing on a piece of paper. In the background, other students are visible at their desks, and a teacher is standing near the back of the room.

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Continued from page 30

can be considered for advancement. Each apprentice is given a six-month evaluation, and an individual development plan is updated on each trainee. Additional classes or tasks may be assigned to help the apprentice in areas where there is a deficiency.

Each apprentice is assigned to a veteran mechanic and begins work in an assigned work area. Selection for the assigned area is made based on experience, trainee's preference, and the interview. Hiring does not occur in each area every year, as turnover and need are always factors in establishing future hiring requirements.

Related Education

All apprentices must complete 144 hours of related instruction each year of the program; most will complete more hours than required.

At present, the university is using two sources for related education training. The General Services Administration (GSA) National Capital Region is operating the Facilities Management Training Center located in the District of Columbia, which is being utilized by the university. Also, individual instructors are being utilized for special classes in air conditioning and temperature control.

Classes are being offered in the following areas:

- Air conditioning
- Electric
- Elevators
- General maintenance
- Plumbing
- Steam
- Carpentry

Classes are based on a four-year program, and apprentices attend one day a week. Apprentices may be asked to attend related classes after work hours and beyond the forty-hour workweek. Overtime is not required as long as the classes are part of the total training program. The first week of work for a new class of apprentices is spent in orientation.

Orientation

Orientation is forty hours as indicated below (includes films, tours, and small group work):

- Introduction to supervisors and managers
- Introduction to the university and the department
- Customer service
- Introduction to tools and work rules
- Safety in the workplace
- Training in asbestos awareness, lead, blood borne pathogens, and right-to-know

Classes are broken into semesters as shown in Figure 1 for the air conditioning apprentice program.

Figure 1

Year One		Year Two	
orientation	40 hours	a/c systems	52 hours
blueprint reading	52 hours	blueprint	52 hours
math	104 hours	math/elect	52 hours
electric	52 hours	refrigeration	52 hours
Year Three		Year Four	
a/c motors repair	52 hours	pneumatics	52 hours
welding	26 hours	air operations	52 hours
oil heat/piping	26 hours	troubleshoot	26 hours
chemistry/motors	52 hours	transformers	26 hours
physics	52 hours	vibration/est	52 hours

Subjects change or are modified as new technology becomes available and the need is established for additional or different classes.

Each trades area has tasks established for the on-the-job portion of the training (OJT). These tasks go from simple in the first year, to the most difficult task required for a mechanic by year four. Each task must be signed off on by the mechanic working with the apprentice or by the supervisor. Ninety-five percent of all tasks must be completed before an apprentice may graduate.

A selection of tasks for each of the four years is listed in Figure 2. It should be noted that a total list involves more than 225 tasks.

Individual Instructors

Instructors have been hired to teach classes to our apprentices. The university has conducted classes in this manner, but it is not the best way if you only have one apprentice in one area. This method has been utilized with success due to finding the right instructor and combining classes to keep the cost in a reasonable range. Certain core classes can be taught to more than one trades area. This is especially true if you combine steam and plumbing, or temperature control, air conditioning, and electric. Many of the trainees will need welding and most will need blueprint reading. Combining classes will help control related education cost.

Community Colleges

Community colleges or local vocational colleges are available to the university and will be utilized in the future. Advanced program development has made this possible for the first time.

In-House Trainers and Private Schools

The university has utilized supervisors, managers, and staff members interested in the program to teach classes over the

Figure 2

Year One

- use power tools safely and effectively
- explain the basic principles and laws of refrigeration
- work effectively within the organization
- store cylinders safely and in accord with regulations
- measure voltage, pipes, and dimensions
- calibrate high/low manifold gauge

Year Two

- clean electric motor and align motors and pulleys
- pressurize a refrigeration system
- dehydrate a system by micron gauge
- maintain/repair water coolers
- measure air flow
- maintain/repair incremental systems

Year Three

- read/interpret electrical schematics and wiring diagrams
- calculate electrical needs
- troubleshoot electrical circuit
- add gas to refrigeration system
- calibrate/adjust pressure controls
- troubleshoot temperature controls

Year Four

- read/interpret blueprints—piping and hvac schematics
- calculate temperature and pressure conversions
- repair/maintain air handling units
- disconnect/install switch/circuit wiring
- install/replace refrigerant metering device
- maintain/repair cooling towers

Apprenticeship as a Recruiting Source for Women and Minorities

The statistics for the future show the need to concentrate on areas for recruitment that are nontraditional. The program at the University of Maryland has been successful in these areas and will continue to concentrate on minority and female hiring in the future. The program has enrolled 100 apprentices since 1985. Of these, 35 percent have been women or minorities. Six women have been recruited and five have been retained. Because of the lack of female applicants in related vocational programs, extra effort and creative recruitment must be exercised to find applicants.

Where to Begin—Questions and Thoughts

What are your employment needs for the next five years?

Will an apprentice program help you meet these needs?

Consider your recruiting record for hiring in the trades area—are you getting the quality and quantity you need?

Contact your state apprenticeship director—consult with your local employment office.

Contact several facilities departments that have an apprenticeship program—ask questions and ask for advice.

Set objectives for your program.

Set up a budget for the program.

Develop a total program, beginning with recruiting, interviewing, related instruction, timetables, promotion standards, performance standards, and how you will sell the program to the other employees.

Train your supervisors and mechanics on how adults learn so you will not lose time waiting for them to “catch on.”

Visit your local vocational programs.

Set up a local advisory council—this is a requirement.

Become involved with your state apprenticeship council.

The University of Maryland has reduced hiring for the last three years due to a reduction in turnover. We are recruiting for 1993 and will hire seven apprentices this year. In addition to the vocational schools, we are also recruiting in traditional high schools and other areas. We are constantly looking for individuals who have the necessary skills and ambition that will continue to give us the type of employee that will take us into the year 2000 and beyond. ■

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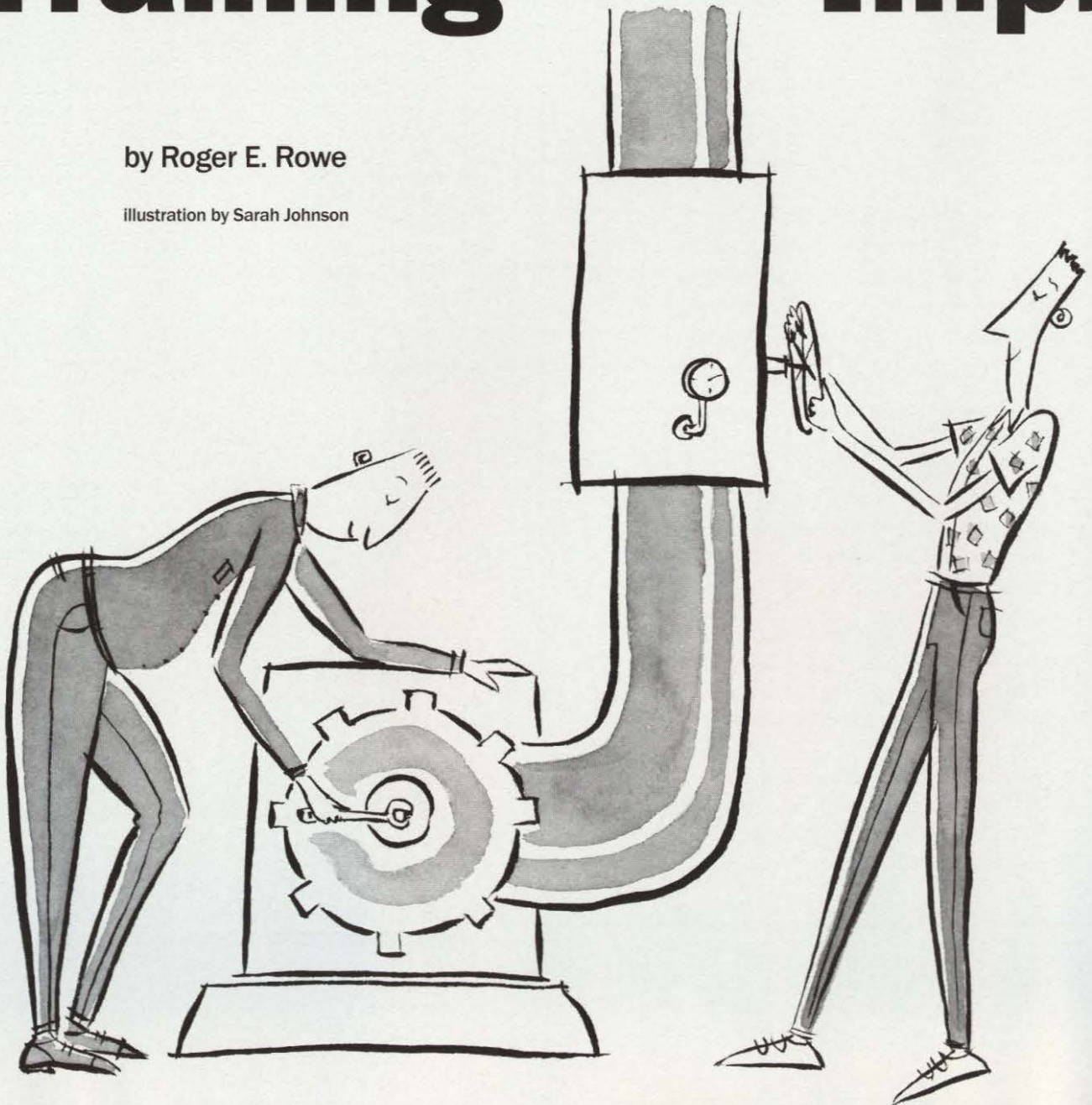
last six years. Also, private vocational training programs have been used when necessary and the curriculum has been suitable for our program. Areas where instructors have not been available have made private schools a viable alternative.

TQM

Training and Imple

by Roger E. Rowe

Illustration by Sarah Johnson



Implementation Plan

While a total quality management training and implementation plan is vital to the successful implementation of TQM, one of the most neglected actions of those responsible for TQM implementation in a physical facilities department or for any organization. The plan is the expression of management's TQM philosophy, and will include the leadership's statement of the TQM mission, vision, objectives, policies, organization, strategy, resources, and responsibilities. The plan should also contain milestones for the training of management, process action teams (PATs), and TQM resource personnel. The plan should detail resource requirements and other responsibilities. Rewards and methods for evaluating TQM should be included. The TQM training and implementation plan must answer all the why? what? when? who? and how? questions, some of which are listed in Figure 1.

The TQM training and implementation plan should be developed through a participatory repetitious process. This process should allow managers at all levels of the organization to inject their judgment and intuition into the plan. Middle management's ideas on this role should also be solicited. The plan must reflect management's willingness to change the organization and the way it is managed. The planning process should consider any existing strengths and weaknesses so that the organization might build on its quality strengths and overcome any weaknesses.

The plan should also take advantage of any opportunities

related to implementing TQM and overcoming any associated risks. The planning steps required are outlined in Figure 2.

The plan should deal with both the short-term (one to two years) and the long-term (five to ten years) aspects of TQM implementation. The plan may be handled in two phases, the first phase being for the TQM prototype (short-term) and the second phase being for the full implementation of TQM

Figure 1

Questions to consider when Developing the TQM Training and Implementation Plan

- Who will be the TQM coordinator and to whom will the TQM coordinator report?
- Will PATs be formed around organizational units, or processes, or both?
- Will PAT membership be voluntary or mandatory?
- What training is required?
- Who will do the training?
- Will facilitators, trainers, and statisticians be full-time or part-time positions?
- How many trainers, facilitators, and statisticians are required?
- Where will these personnel resources be located, both physically and organizationally?
- Where will the training and team meetings be held?
- How will TQM efforts be recognized and rewarded?
- What changes will be required of the existing policies, regulations, operating instructions, etc.?
- What changes will be required of the personnel evaluation system?

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(long-term). It must, above all, be flexible so the learning that occurs during implementation can be used to improve the plan. The plan can be delegated to staff members to prepare, but the responsibility for its content and implementation must rest with the director and top management. One recommended plan is shown below. This plan deliberately combined training and implementation because they must go hand-in-hand; training is the first step in implementation.

Figure 2

TQM Planning Steps (Estimated Time Span: 12-18 Months)

STEP 1 Executive Commitment to Total Quality Management

Train/orient top management team in

- Principles of Total Quality Management
- Application within the department or organization
- Team approach to quality improvement
- Importance of top management commitment

STEP 2 Create a Vision and Philosophy

- Formulate a vision and philosophy that will guide the department's quality efforts
- Issue a policy statement on the department's principles of quality

STEP 3 Establish a Quality Council

- Include top management of the department
- Include the head of the department or charter the council to act on behalf of the director or department head.

STEP 4 Develop a Total Quality Management Strategy

- Determine approach to institutionalizing quality in the department
- Determine leadership structure for Total Quality Management efforts
- Incorporate Total Quality Management activities into the strategic and business planning processes
- Establish a system for departmental units to set quality improvement goals
- Determine how and when to involve the employee union in implementation of Total Quality Management
- Use existing management systems, wherever appropriate, in implementing Total Quality Management

STEP 5 Select organizational Unit to Implement Total Quality Management

- Determine readiness of the unit
- Decide on the scope of implementation (across the department or within a limited number of components)

STEP 6 Conduct Training Needs Analysis

- Analyze training needs of top management and supervisors
- Determine what types of courses need to be developed (awareness, problem-solving, group dynamics, statistics, etc.) for each group

STEP 7 Determine Resources for Implementation

- Determine timeframes and costs for developing and conducting training
- Identify the sources of funding for training and recognition systems
- Determine whether in-house staff can develop and conduct training

STEP 8 Select Suppliers of Training and Expertise

- Identify individual(s) with quality expertise to serve as consultant(s)
- Identify suppliers of training
- Develop and conduct training

STEP 9 Identify Standards and Measures

- Ensure that organizational units develop standards for measuring whether products and services meet customer requirements

- Adjust existing measurement and management systems to measure whether customer requirements are being met

STEP 10 Institutionalize Total Quality Management

- Institutionalize systems for training, involving, rewarding, and recognizing employees
- Institutionalize strategies, goal-setting, and measurement of improvements in quality
- Institutionalize process analysis and structured problem-solving approaches

STEP 11 Monitor and Evaluate Results

- Monitor the progress of teams on quality improvement projects
- Track quality improvements against goals

STEP 12 Publicize and Recognize

- Publicize successes
- Recognize and reward quality improvement
- Promote Total Quality Management throughout the organization

STEP 13 Adjust the Total Quality Management Process

- Use feedback to modify and improve the process
- Expand to other segments of the organization

STEP 14 Continuous Improvement

- Select new processes to improve
- Continue to improve all processes to remove defects

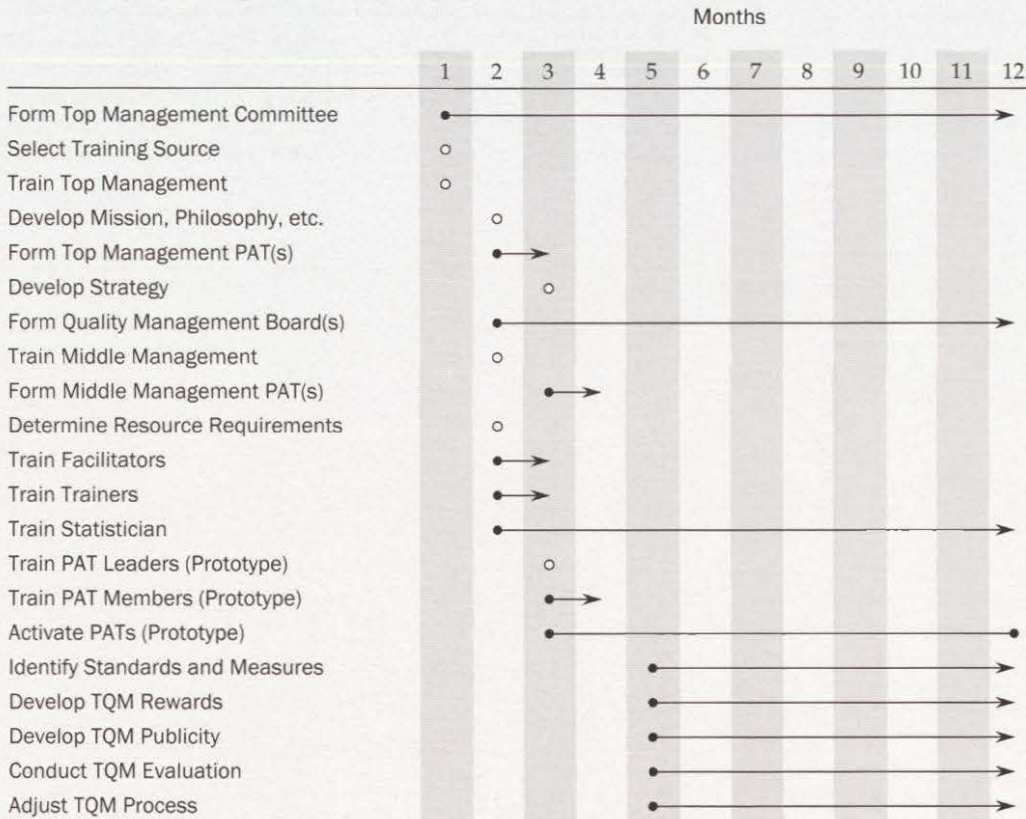
TQM TRAINING AND IMPLEMENTATION PLAN

- Mission statement
- Visions
- Principles
- Objectives
- Policies
- Strategy
- Organization
- Resource requirements
- Training
- Standards and measures
- Rewards/recognition/publicity
- Prototype evaluation criteria
- Continuous improvement of TQM process

It is recommended that each organization start with a TQM prototype to adapt TQM to its unique situation. The plan for the prototype should contain all the elements of the plan for full organizational training and implementation, but on a much smaller scale. The plan outlines the goals, objectives, and milestones for the prototype. It will establish resource support and responsibilities. Typical milestones for a TQM prototype training and implementation plan are shown in Figure 3.

The training of everyone in TQM philosophy, quantitative methods, and employee involvement techniques should be a priority in the plan. It is expected that over time everyone in the organization will have the opportunity to be on a PAT; thus everyone eventually will have at least four days of PAT member training. A summary of a typical training program is outlined in Figure 4.

The training of top management should be a top priority in the plan, and should precede all other training. Top management training may even precede the development of the TQM training and implementation plan. Regardless of when they are trained, management should operate as a process action team(s) after receiving their training. This team activity by management is a welcome addition to the plan. Such a

Figure 3**TQM Prototype Training Implementation Milestones**

ing their training. The course content should be similar to that in the top management course. The time length and presentation should also follow the example set by the top management course. Care must be taken to emphasize to middle management their unique role (PAT project management) in TQM.

Middle management training may also precede the final development of the training and implementation plan, allowing the training and PAT effort to help define the plan. If it doesn't, the TQM plan must be designed with their role well thought out. If possible, top management should lead the training of middle management. They could introduce the training and finish it by answering questions concerning their TQM commitment or play a more active part as part-time instructors.

Facilitators work with

commitment by management really sets the tone for acceptance of TQM by the rest of the employees. If possible, all other training should be held after top management has been trained and has completed at least one process improvement effort as a process action team.

Top management training should provide an understanding of the philosophy, a continuous improvement strategy, and the statistical tools. A typical course is shown in Figure 5.

Middle management training should mirror the training given to top management, including the need to complete at least one process improvement effort as a PAT after complet-

process action teams to help them get started as a team in improving their processes. They help the PAT leader plan for and conduct team meetings. They assist the team leader with team dynamics. They provide assistance with the eight-stage continuous improvement strategy, instructing in the simpler tools used in the different stages such as flow charting, cause and effect diagrams and control charts, but not advanced statistical techniques like design of experiments or analysis of variance.

Facilitators work with a team for its first two or three months of existence then move on to help another team. Facilitators should be given the same training as top management, plus those topics unique to the facilitator's role as shown in Figure 6. Facilitator training is usually a minimum of forty hours in length, with emphasis on role playing and case studies. The initial team of facilitators should be trained by someone from outside the organization; later an internal training capability may be developed.

Eventually the need will arise to have a training capability in the organization. This may or may not occur during the prototype. It is recommended that the organization start plan-

Figure 4 Recommended TQM Training

GROUP	CONTENT	TIME
Management	Detailed introduction: direction, philosophy, responsibilities, implementation strategy, variation concepts	2 days
Management	Continuous improvement strategy, statistical tools, case studies	2 or 3 days
Resource Personnel: Facilitators, Trainers, Statisticians, PAT Leaders	Introduction to TQM, variation concepts, continuous improvement strategy, statistical tools, group dynamics, role, responsibilities, resources	Depends upon initial qualifications, minimum 5 days
PAT Members	Continuous improvement strategy, statistical tools, case studies	2 or 3 days
Everyone	Orientation	3 hours

Figure 5**Typical TQM Course Outline**

- Overview of TQM
- TQM Implementation
- Concept of Variation
- Continuous Improvement Strategy
- Statistical Tools used in the Continuous Improvement Strategy for TQM
- Case Studies Illustrating the TQM Approach

Figure 6**Facilitator Training: Additional Topics**

- Role of Resource Personnel in TQM
- Leadership
- Team Characteristics
- Team members are People too
- The TQM Process: The Team in Action
- Tools to Evaluate Team Success

ning for this train-the-trainer training requirement as soon as possible, if for no other reason than to identify the requirement as part of the initial planning. Early planning also allows for training the organization trainers during the prototype, assuring their availability when total organization training and implementation is indicated.

Statistician training is important and the organization will have a need for its own statistical capability if one does not currently exist. Plans need to be made for providing statistical support during the prototype and for long-range use. If there is no statistical capability in-house, then plans need to be made to acquire those individuals who will become the organization statisticians. Formal academic training through the graduate level in applied statistics is desired and actual experience is highly recommended for these individuals. The statistician should also attend the basic TQM course outlined above. The "chief statistician" should be part of the organization's executive staff.

PAT leaders need additional training to prepare them for their role of leading their team in process improvement. This training emphasizes how to lead a meeting, how to deal with group dynamics and how to take a team through the eight stages of process improvement. PAT leader training should be as close in time as possible to the training of the rest of the team. This training should precede the training they receive with the members of their process action team. The training should be conducted by someone who has successfully led a PAT or facilitated a PAT. This additional training is usually eight to sixteen hours, as outlined below. Often the PAT's facilitator and team leader attend the course together as an integral part of partnership formation.

Plans must be made to provide the members of the PATs (including the PAT leader) with the knowledge they need to improve their processes. Their training also covers topics outlined in the typical TQM course outline. Emphasis is given to the practical application of TQM to their processes. They must understand their role and the eight-stage continuous improvement strategy. They must be given practice in the tools to be used in each of the stages. The training is usually thirty-two to forty hours long. It is also recommended that the PAT training be split into a sixteen-hour session followed four to six weeks later with either two eight-hour sessions or by three one-day sessions about four to six weeks apart. This allows the teams to apply what they have learned to their specific processes and thus gain a better understanding of TQM. Learning by doing is always the preferred learning mode. PAT team members can be taught by organization personnel after trainers completely understand the operation of PATs and the eight-stage continuous improvement strategy. In fact, training of team members by management is recommended as the most effective way for management to gain a deep understanding of and show a strong commitment to TQM. If this is not feasible, management must be given some other role during

team member training to demonstrate their commitment to TQM. Team members should leave their training sessions excited about TQM. They must also leave confident in their ability to apply the continuous improvement strategy and confident that they will receive support from management.

Plans must be made to provide a TQM orientation to everyone in the organization. This session describes what is taking place in the organization, outlines the initial involvement required, and describes the prototype. This session is best given by the top management in the organization to demon-

Figure 7**PAT Leader Course Outline****INTRODUCTION**

Organization, Responsibilities, Membership

Mission/Goal(s)

Exercise: Define PAT Mission/Goals

MEETINGS

PAT Meetings

Exercise: Brainstorm Elements of Effective Meetings

Guidelines

Agendas

Planning an Effective Meeting

Leading a Successful Meeting

Team meeting Preparation Checklist

Process Improvement Plan

Responsibility Matrix

Exercise: Brainstorm Obstacles to Process Improvement

PAT Exercises

TEAM DYNAMICS

High Performance Teams

Successful Team

Leader Skills

Relationships

Exercise: Achieving Consensus

Teamwork

Roles

Climate

Commitment

Dealing with Conflict

Exercise: Disruptive Group Behavior

TEAM MEASUREMENT AND EVALUATION

Meeting Effectiveness

Process Improvement Effectiveness

Exercise: Brainstorm Elements of Effective Management

Support

Management Support Effectiveness

Annual Review

SUMMARY

What Goes Wrong with Teams

Getting the Most from Teams

Role Play the Team Meeting

strate their commitment.

The plan should outline how effectiveness (satisfying customer requirements) and efficiency (utilization of resources) measures are to be established and baselined. Generally, employees should be involved in developing their own measures to assure acceptance. Results (outputs), not activity, should be measured. Group- or team-based measures are preferred to individual measures. Finally, a family of measures which considers cost, schedule, and quality is recommended over a single measure.

The plan should include a reward system for successful

Continued on page 40

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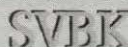
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PATs. Recognition should emphasize team, not individual awards. However, individual accomplishments may be appropriate for some situations. Competing for rewards should not "pit" team members against each other. One of the objectives of TQM is to foster a team spirit in the organization and all rewards should support this objective. Rewards do not need to be elaborate or expensive. They do need to be timely, fair, and fitting. The employees are the best guide as to what is considered fitting by them. Ask them; they will tell which rewards do and do not motivate them. Sometimes just a simple "thank you" by management is a sufficient reward. Celebrations should also be planned.

The criteria for determining the success of the TQM prototype should be established before its implementation. If this is not done, an objective evaluation will be impossible. The criteria may include changes in attitudes, process improvements, safety improvements, cost of quality accomplishments, suggestions, other savings achieved, and effect on customer satisfaction. A baseline must be established before the prototype is started to assure an objective comparison. The results of this evaluation will determine how the prototype could have been more successful. These lessons learned then should be applied when implementing TQM organization-wide.

Those things that need to be changed before expanding TQM to the rest of the organization should be documented and the plan changed accordingly. A note should be made of those ideas that worked well and those that require a slight modification. The whole purpose for having a prototype is to learn how to adapt TQM to the organization on a small scale before applying it to the entire organization. The prototype plan should be continuously updated to document the lessons that are learned during the prototype. A monthly review of the prototype plan by the top management committee is recommended for this purpose.

The basis for the revised TQM training and implementation plan is the learning that takes place during the TQM prototype. Those things that contributed to the success of the prototype should be replicated throughout the rest of the organization. Any problems that developed during the prototype should be averted by developing solutions to them. The outline of the revised plan will be similar to the prototype training but with different milestones. The importance of this plan is that management must now prioritize the continued training and implementation, add more resources for TQM support and establish a longer time span for training and implementation throughout the whole organization. The mission, vision, objectives, policies and strategy established in the prototype plan should be reviewed and updated based on what was learned.

The resource requirements will significantly increase when training and implementing expands to the entire organization. More money, time, and personnel will be required to support the effort. The results from the prototype will help determine the new requirements. For example, how many teams can a facilitator facilitate? Will facilitators be full-time or part-time? How many training rooms and meeting rooms will be required? How much turnover and/or movement of personnel is expected and how will that affect training? How fast can statistical capability be developed? Developing statistical capability can become a real challenge. Where should this capability reside? How will this knowledge and experience be obtained? The answers to these and other questions have a significant effect on the new plan.

Top and middle management training should only be necessary for those who are new to the organization or to management. Facilitator training will still be a requirement and the need may increase because of the increase in the number of teams. The question may become, "Who should do this training now?"

The majority of the effort will be the training of new PAT team members and leaders. This will be a time-consuming effort and may require its own resource plan. Who will do the training? Where will the training be done? When will the training be done? are the basic questions needing answers. There may be a need to develop a train-the-trainer capability in order to satisfy this requirement.

A new facility requirement may be the additional TQM focus rooms to be used for team meetings and as communications centers. Projects being worked on are displayed here and all TQM communications are available in this room. These TQM focus rooms serve as an ideal way to showcase TQM.

Rewards will continue to be an important part of the new plan. Again the emphasis should be on team awards. Publicity, a reward in itself, should also be considered in the new plan. All rewards, including publicity, should be displayed in the TQM focus room.

Periodic evaluation by management should continue on a not-less-than quarterly basis. This evaluation should look at both high-level measures (customer satisfaction, productivity, absenteeism, etc.) and low-level measures (processes in control, processes now capable). Teams should be taught how to evaluate themselves in terms of meeting and process improvement effectiveness.

The continuous improvement strategy mentioned several times in this article is defined below. The first three stages focus on process identification and understanding, while stages four through eight focus on process improvement.

Continuous Improvement Strategy

Identify the Process

1. Select process and team
2. Describe current process
3. Assess process for control/capability

Improve the Process

4. Theorize for improvement
5. Plan experiment to test theory
6. Conduct experiment and analyze results
7. Compare results with theory
8. Change process or theory

The effort put forth to plan for TQM will pay many dividends and may prevent the false starts that many organizations experience. Not only should good planning be done before TQM is implemented, but it must be done by top management if TQM is to be a success in the organization.

TQM implementation should eventually become an integral part of the organization's strategic plan. This may happen initially or when the revised TQM training and implementation plan is developed.

In summary, all the fundamental requirements for success deal with people issues, not statistics. People, not numbers, improve organizations. Enthused employees can work wonders, but they must be trained and totally understand how they fit into the organization and how the plan is going to be implemented. ■

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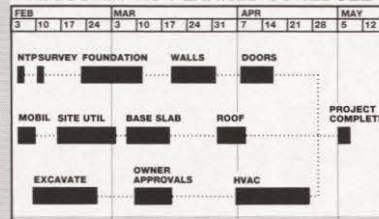
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Continued Learning Through the Executive Development Institute

by Todd Bemenderfer



A highlight of the University of Notre Dame's Executive Program's year is the annual APPA Executive Development Institute. Along with the coming of spring and the blossoming of the campus comes more than thirty senior facilities officers from an equal number of outstanding educational institutions. They travel from the United States, Canada, the Caribbean, Europe, and the Middle East, from public and private, large and small institutions. Regardless of their origin, they come with a common goal in mind: to learn more about succeeding in their selected profession of facilities management.

More than 200 senior facilities officers have attended the APPA Executive Development Institute since it began in the summer of 1987. Great experiences and memories have

resulted from these meetings. In any one class you may find well over 600 years of management experience. Wherever the truth may lie, the fact is that a very special opportunity occurs when you are able to get this many intelligent, dedicated people together to focus on improving their management abilities.

Our primary goal is to ensure that participants maximize the return from their investment of time and money. A great deal of effort is placed on making sure that every detail of the program contributes to a goal. In order to set these goals, we first needed to know what was important to the success of a facilities management operation. We began by working with the people at the APPA office, developing a questionnaire, and visiting with people in facilities management departments here at Notre Dame and at other universities. The result was the identification of the major issues faced by higher education facilities management.

Once the major issues identified were categorized into the

Todd Bemenderfer is associate director of executive programs, College of Business Administration, at the University of Notre Dame, Notre Dame, Indiana.

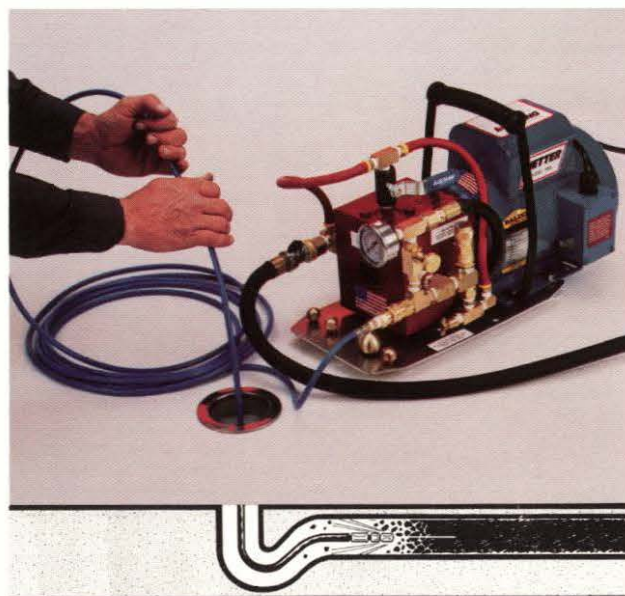
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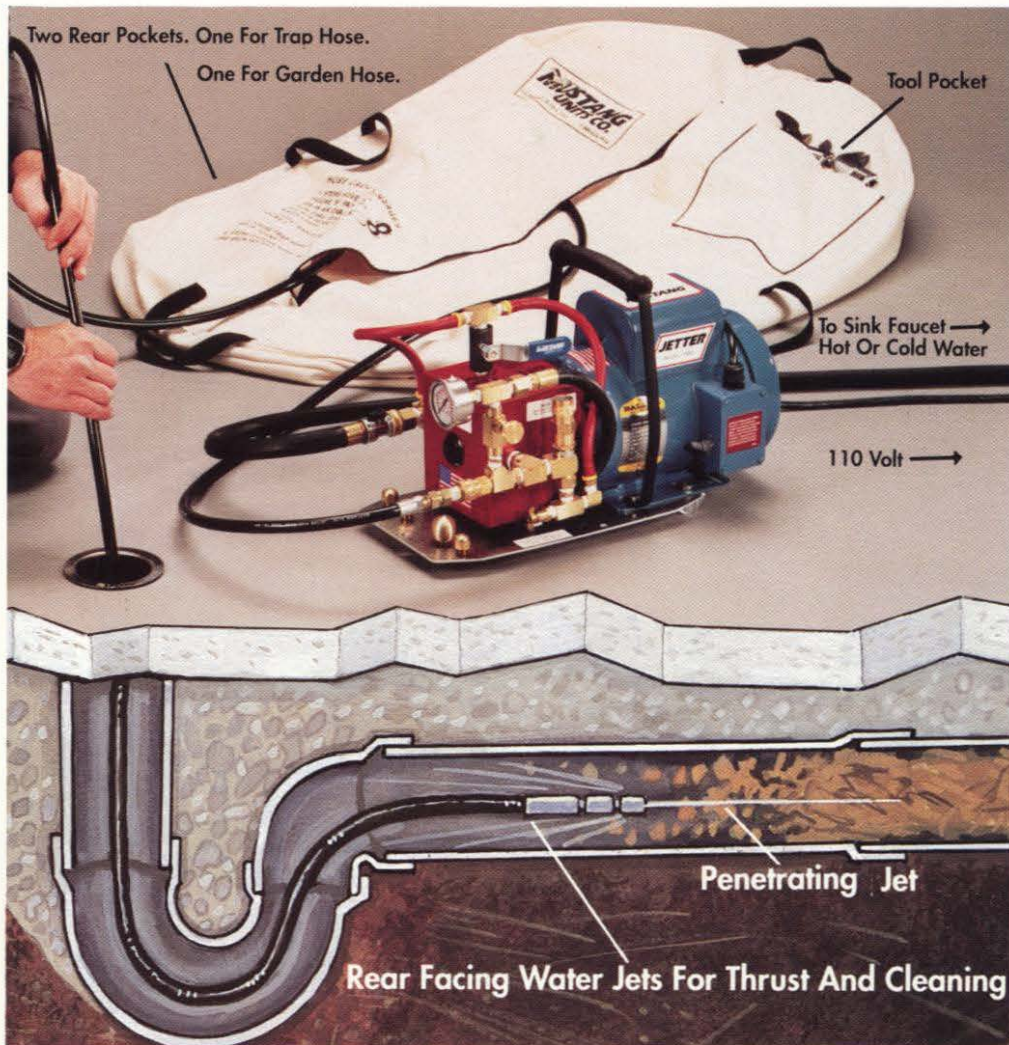
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various disciplines of business, we selected educators who would develop meaningful presentations addressing the identified issues. It was important that the presentations be developed so that the participants have the opportunity for extensive discussion and exchange of ideas. The attempt was not that the instructor would have all of the answers, but that the focused interaction of the participants with the instructor and each other would result in ideas and solutions. The success of the process is evident in the comments and success of the participants.

"What topics should we cover and how can we improve?" are questions that we constantly ask ourselves, APPA, and especially the participants. The program receives several reviews per year. The first review takes place while the program is running. To provide continuity and support, a program coordinator is with the group for the entire week. Since the coordinator has been responsible for the preparation of the materials and interaction with the instructors prior to the program, the ability to evaluate the success of goal attainment is possible. Participants are seldom shy in providing their perspectives of the value of the sessions. Also, they know that they have the ability to provide the input that can help to improve the program for the next year.

We can learn either from our own experiences or from others. Often we have to learn by doing because we've lacked the ability to know how others may have already solved the problems that we are facing. From the social gathering at the beginning of the program until the granting of the certificate and class picture at the close of the program, the focus is on networking and creating an expanded group of experts available for support and exchange.

The topics that we cover during the week are constantly evolving to ensure current information to meet the needs of successful higher education facilities managers. The current program topics are

- Strategic thinking and acting
- Marketing of services
- Total quality management
- Creativity and innovation in an organization
- Problem solving, leadership, and motivation
- Understanding university finances
- Long-range budgeting
- Media relations
- True success in the workplace.

It is impossible to identify what specific topic is the most appreciated by the participants. Because participants have varying backgrounds, experiences, and responsibilities, each of the sessions are rated most important by someone.

Participants bring unique sets of experiences and perspectives to each of the sessions. Individuals may have extensive background and experience in certain topics. The goal of every session is to build on the total of the expertise available. Those considered "experts" participate with exceptional value in the discussions and interaction with others. This could be due to the lack of perceived competition between

their institutions. Whatever the reason, it provides a wealth of exchange in ideas for success. With this format of exchange and sharing there is the opportunity for even the most experienced officers to gain.

With the ever increasing cost of operation, the need for better planning is vital. The area of strategic thinking discusses the idea that to be successful you must have a definitive process to achieve definite goals. The process provides for the

**A very special opportunity occurs when
you are able to get this many intelligent,
dedicated people together to focus on
improving their management abilities.**

needs of dealing with what many view as an uncertain future.

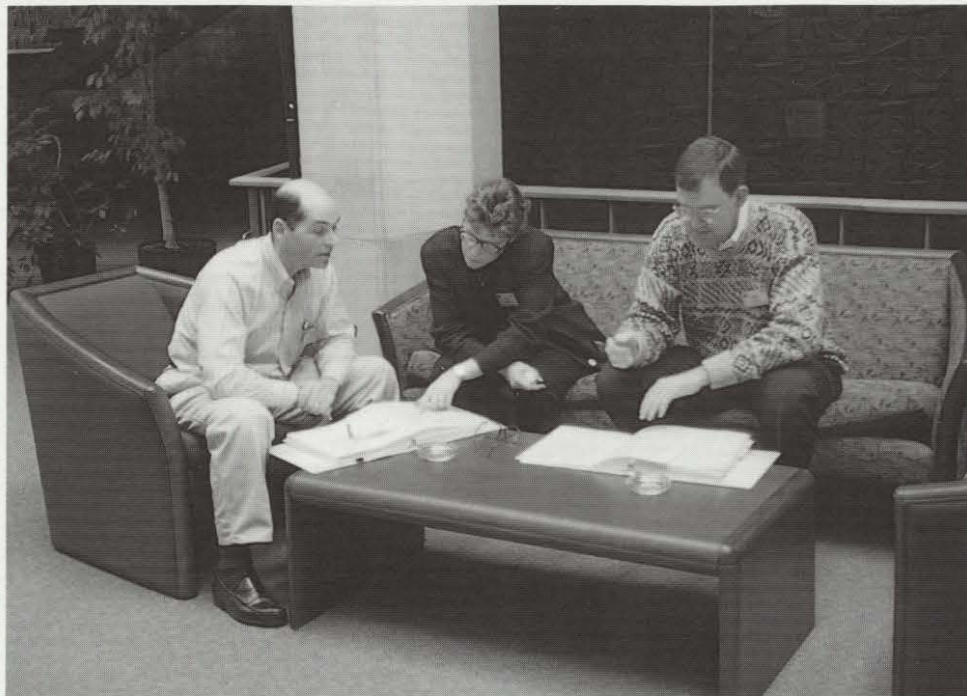
The area of marketing has always included lively discussion from the group. From "I don't really see how marketing applies to me" to "We must market the benefits of what we offer an institution," perspectives that cover the full range of marketing are discussed. Over the years the importance of this subject has grown, and it is rapidly becoming one of the most essential areas that those attending believe will directly impact their ability for success in the future. Marketing may be the actual selling of a good or service, or it might be the creation of the desired perception that we want others to have. A most recent revelation was a participant reporting that his department was in the process of hiring a person trained in marketing to be their customer relations specialist.

This is a far cry from the significant response from early groups that said that marketing was important, but ...

Total quality management is a fairly new topic for the APPA Executive Development Institute. The observation is that it is a process that many are not yet familiar with. There are those in the class that have experience with implementing the concepts of TQM either with recent efforts at their facilities or from prior positions with companies that utilized it. The focus of this session is to discuss the various perspectives of total quality management, where the concept came from, and what it means to the management of campus facilities. The program emphasizes that the process should be completed in small incremental doses and that there is great need for patience and flexibility.

The topics of creativity and innovation, problem solving, and leadership and motivation deal with the interpersonal and cultural aspects of management. How often have you heard someone say, "If I want something done right, I have to do it myself"? Possibly you've been tempted to think that on

occasion yourself. Managing others is often the most challenging part. Individuals are unique and complex. A recent article evaluating OCR software stated that the most advanced, sophisticated package requiring a high-powered, multimegabyte, personal computer had at best the intelligence of a four-year-old. And yet many of us are overwhelmed by the complexity of that very same machine. This area has consistently been a valued part of the program, receiving such comments as "excellent," "very applicable," and "most useful in being successful with the other topics of the week!"



The bottom line in the area of finance is that there is a vast discrepancy among the participants in the nature and extent of their involvement in the financial side of the business. This has been an interesting topic for discussion due to these varying experiences and points of view. The focus of the session is how the budgeting process is a never-ending battle to match limited resources with unlimited needs, wants, and desires. The participants leave this session with comments of: "I did not believe how interesting this could be," "Superb," and "I wish I'd met an instructor like this years ago."

**The individuals attending the APPA
Executive Development Institute do so
because they possess a serious
commitment to learn.**

As we entered the 1990s, the topic of media relations was a request that was heard more and more often. In response, a segment was developed and has become a standard of the program. During your career it will be virtually impossible

for you to avoid meeting or dealing with the news media. Though their influence on public opinion is indirect, they can provide a useful service and valuable opportunity to have your message reach large numbers of people. Those people who have been most successful in dealing with the news media have discovered that such encounters require careful preparation and some understanding of how media representatives operate. The Institute discussion revolves around these topics and what they mean to enhancing the operation and management of facilities.

An often-asked question is, "After I've mastered all of this, how do I overcome the inertia present in the organization and energize people to action?" In answer to this question in 1993, we introduced a new topic to the program called True Success in the Workplace. We explore with the participants the basic conditions of personal and professional success, drawing on the best that has ever been written on the topic, from the ancient Greeks to the present day. With liberal doses of humor and personal anecdotes, the session illustrates how organizations as well as individuals can benefit from an implementation of seven basic points. The response to this new venture into philosophy and ethics in business education has been overwhelming! Feedback from participants is most important to the future direction of the program. With comments like "truly the most important," "all else was bread and butter," and "simply the best" this topic has a definite place in facility officer development.

And so another opportunity to interact with thirty-two greatly inspired and inspiring leaders of facilities management reaches its end and they depart for the opportunities, challenges, successes, and failures that await them at their respective institutions.

Why did they come? The individuals attending the APPA Executive Development Institute do so because they possess a serious commitment to learn. Each year different faces are in the class, but the same dedication and high expectations for a quality opportunity to gain from the experience are clearly exhibited. The long hours of the week pass quickly when interacting with individuals so completely absorbed in the process of discovery, sharing, and learning.

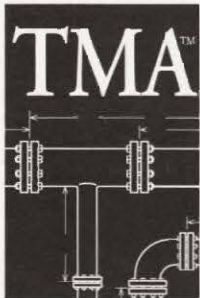
The Institute is not meant to be a terminal learning experience. The opportunity and the necessity of constantly learning is as much a given today as it has ever been. In fact, if you consider the speed at which new information is developed and made available, today more than ever, you need to envision yourself constantly learning. Change is ever more rapidly presenting itself, and we participate not only in observing change, but also by the decisions and choices we make to create it.

Flexibility is another major requirement for success. If the available amount of information is, as suggested, doubling every eighteen months, it is inconceivable that a person can remain even remotely informed and current without focused

effort. One good way to do so, as one of our philosophy professors says so well, is to "network with sages." The Institute strives to place those "sages" in the classroom as instructors and it is certain that a distinct learning opportunity to those attending is the 400 to 600 years of experience found in the "sages" we call participants.

Whether you attend the Institute or don't, the need to attend to personal development is a never-ending process. Often businesses have viewed education, training, and development as an expense. Unfortunately, as such it has been assigned a priority that results in it being the first item to be cut when budgets need to be trimmed.

It is said time and time again that for something to happen, we need to write it down and make it a part of our plan. Make sure that the goals and the expectations for desired change are clearly identified before deciding on the process or product of your training and development investment. Dollars spent should be viewed as an opportunity to improve the operation and not as an obligation that you must fulfill. Finally, do not include your personal development or the training and development of your staff in the deferred maintenance category at your institution. ■



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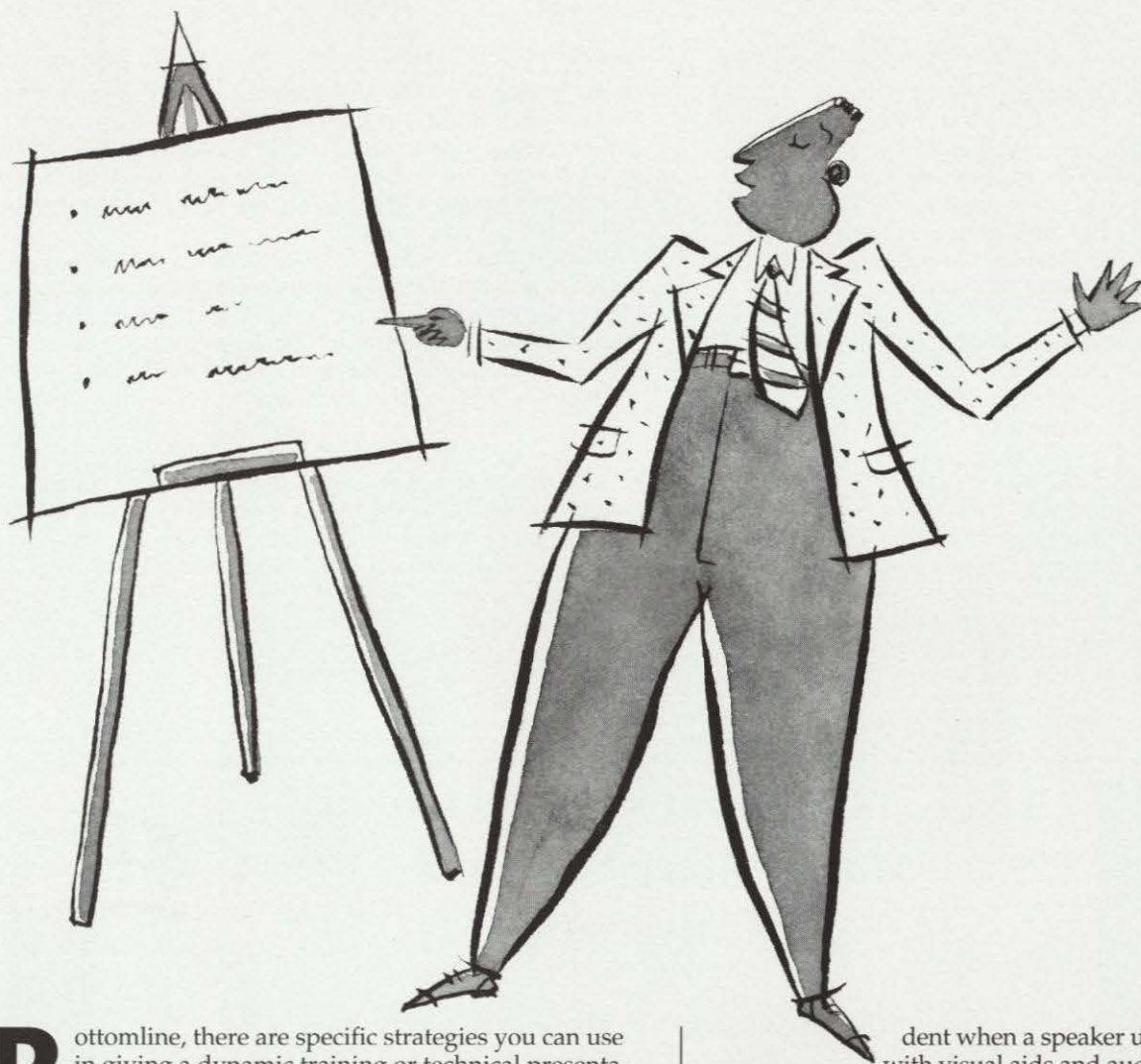
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Bottomline, there are specific strategies you can use in giving a dynamic training or technical presentation. If you are willing to make the effort, you can set yourself up for success. You owe it to yourself and your audiences!

The Chinese proverb—"I hear and I forget, I see and I remember, I do and I understand"—needs to become the paradigm for anyone preparing a presentation. As you create your presentation, these words serve as a reminder that there needs to be more to a presentation than lecturing. A presentation is not like a written report or technical paper—your audience cannot reread what you present. While you may offer handouts that summarize your points, appealing to the senses is what will make your presentation come alive.

Research has demonstrated that if a speaker uses the lecture format alone, the audience retention of information two weeks after they hear it is only about 10 percent. Using a combination of visual aids and lecture increases retention to 50 percent. The greatest retention, closer to 100 percent, is evi-

dent when a speaker uses lecture coupled with visual aids and audience involvement.

There are specific strategies you can use in preparing your content that will make it crisp, dynamic, and memorable. However, content and expertise alone will not make for a successful presentation. As a presenter you must be able to get information across in a way that facilitates learning and understanding. You have to pay as much attention to your delivery as to your content. The messenger is as important as the message. Being able to communicate and present well are key criteria to career success in any field.

Think back a minute to recall a presenter that most impressed you. What made this person, the content, and the experience memorable? My guess is it has a lot to do with the presenter using the strategies discussed in this article. Many people believe that successful presenters are born with dynamic personalities that make them naturally good speakers. However, most successful presenters agree that hard work on presentation preparation and delivery is what has moved them from a flat presentation to a stellar one. So where do you begin?

Begin with the end result in mind. First visualize, much as an athlete would in preparing for a contest, that you are a

Santalynda Marrero-Johnson, Ed.D., is president of SMJ Consulting, Fremont, California. She is also a faculty member at APPA's Institute for Facilities Management.

TECHNICAL PRESENTATIONS DO NOT HAVE TO BE *Boring!*

by Santalynda Marrero-Johnson

illustration by Sarah Johnson

confident and dynamic speaker. See the audience filled with enthusiasm for your topic. You are knowledgeable, your voice is clear and strong, your slides and materials are well coordinated and helpful. Now to some specific strategies that will help you set yourself up for success as a presenter.

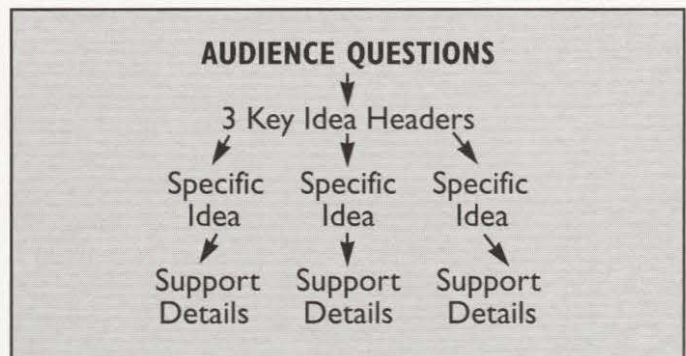
Preparation

Assessing your audience:

Knowing who will hear and see your presentation is critical in selecting your content and preparing your best delivery. Ask questions about the audience relative to levels of expertise, diversity, interest in the topic, etc. If possible, I highly recommend you talk to a few of the participants beforehand to inquire about their expectations and needs.

Appreciate what the audience perspective might be by asking yourself some of the following questions, and working the answers into your presentation.

- Why is this topic, work, program, process important?
- What is my motivation in presenting this topic?
- What is the "big picture" scope of the topic?
- What were the objectives and how does this relate to me (an audience member)?
- What results were accomplished?

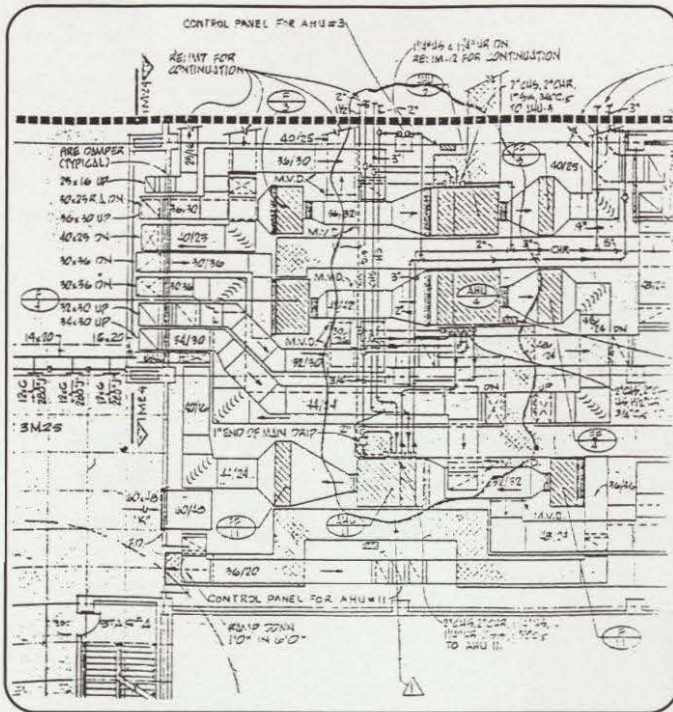


- What next steps should I consider?

Once you have assessed your audience and its needs, you can outline and fill in the pieces of your presentation.

Preparing your content:

Keeping in mind the questions you want to answer for your audience, choose three to five key points as your headers. Each key headers should have at most three supporting ideas. In turn, each of the three supporting ideas will have details.

Poor

Once you have expanded on each of your ideas in detail you can design your slides and visual aids to use in your delivery.

Designing Slides

Whether using slides or overhead transparencies, apply the K.I.S.S. principle: "Keep It Simple and Specific." For example, in technical presentations more is not necessarily better. (See diagrams.)

Poor

Chilled water or hot water coil piping within the context of the entire structure.

Better

Specific and simplified representation of chilled water or hot water coil piping.

When using tables or graphs on slides or transparencies, avoid overloading them. Use only a few numbers or simple calculations. A guideline for making words on a visual work for you and the audience calls for not more than five bullet key points per visual and not more than six words per each line. The following serve as examples to illustrate this point.

Poor

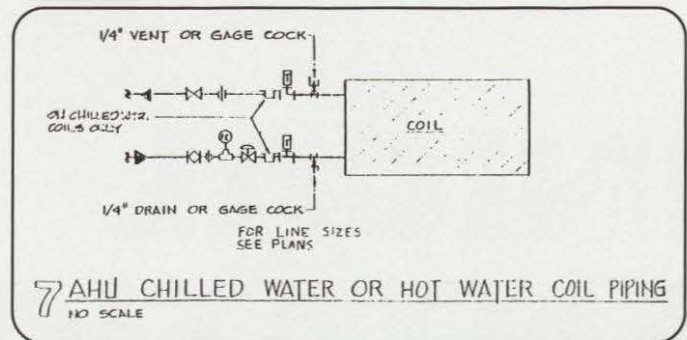
1. Identifying individual components of quality is important to beginning the process in any organization. 2. Some of the components include: identifying and solving problems, assuring customer service, measuring results, etc.

Improved

Components of a Quality Program

- Identify and solve quality problems
- Assure customer satisfaction
- Measure results
- Set up quality groups

The final number of slides or transparencies you use is best determined as you rehearse your presentation and time yourself. A rule of thumb that can help guide you in determining the time needed is calculated based on the number of slides.

Better

Generally you should consider allotting ten minutes for seven slides, fifteen minutes for twelve slides, twenty minutes for fifteen slides, and thirty minutes for twenty slides. You may want to have extra slides, but as you practice and time yourself determine ahead of time which are the most critical visuals to show. My best guess when using overhead transparencies is to add two extra minutes to account for the time it will take to place and remove the viewfoil on the overhead projector.

Preparing the Introduction and Close

You need to pay a lot of attention to your introduction because you never get a second chance to make a good first impression. Make it count. Your goal is to grab their attention and excite them about your topic. A good way to start is to first tell them what you're going to tell them. As you proceed in your presentation you go about telling them, and in your conclusion you tell them what you've told them in summary key points. Or you might begin with a story of how you became interested or involved in the topic, program, process, research, etc. A joke or quote that links to the subject at hand can work well if you practice. Personalizing the topic to the audience and to yourself sets a tone conducive to learning. I have used analogies, tales, poems, or a magic trick to make a point in a way that engages the audience early on.

In the introduction try to answer some of the aforementioned questions that represent the audience perspective and needs. Think of your audience and what they might want to hear and how best they can integrate and remember your material. The introduction is key to building the bridge between you and the audience. Building rapport with your audience early on serves two purposes: it puts you at ease and it sets the tone for the participants' interaction with you and your message.

Once you have gone through your introduction and given your delivery, before closing, announce to the audience that you are coming to your concluding comments by saying, "In conclusion" or "On a final note, what I would like you to remember is" The audience will appreciate knowing the end is near and you can compose your finale. The most successful presenters are skillful at coming full circle by ending with a link to the introduction. Perhaps it's the answer to the rhetorical question you posed, or picture of the finished product, or whatever kept the audience interested in pursuing the topic. Whichever way you end, do it with a BANG! Tell them what you told them in brief summary and then end on a high note that will make you and your message memorable.

Delivery

All presentations, especially technical ones, can come alive by appealing to the senses. Props, samples, pictures, parts,

components, anything the audience can hold and manipulate adds to their comprehension. Vary your delivery. For example, use a video clip of a design team in action. Keep in mind that the variety is key to engaging your audience. If you're saying to yourself that this sounds a lot like entertainment, you are on the right track.

Whatever tools you use in adding to your presentation, the most important visual is YOU. Specifically, do not underestimate the impact of your voice (tone, volume, silence) and body language (hand gestures, eye contact, eyebrows, smile, shoulders). Eye contact with your audience is a key factor in coming across as competent, sincere, and credible. Your gestures communicate meaning even beyond words. At first you may feel awkward, but with practice your gestures will become more natural, your tone will become more conversational, and you will feel less contrived. This is when the strengths of your natural style will emerge.

A successful presentation is a kinesthetic experience of you and your audience. Strive for a natural style, but border on exaggeration. Don't worry, most of you will not come across as overpowering. You need to exude a degree of excitement and passion about your topic. Be as deliberate in planning or staging ways to engage and involve your audience as you are in researching your topic. Until you are well versed you may need to literally plant the specific gestures, props, and samples that you will use to make your presentation dynamic. Inject humor, questions, demonstrations, small group exercises

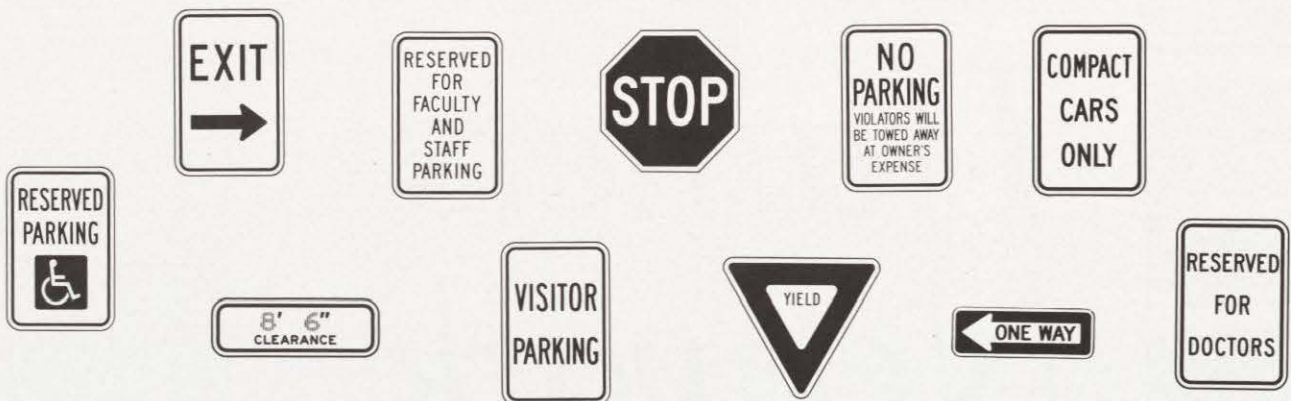
that facilitate learning and sharing of information among the participants. You have a responsibility to your audience to grab their attention and keep it throughout. All of these techniques will help you do that.

Practice

Perfect practice makes perfect. Record your voice, practice in front of the mirror, with an audience of friends, colleagues, anyone who will listen. If possible, videotape yourself. Experiment, self-correct, take a chance. Seek every opportunity to present at meetings, conferences, join your local Toastmasters Club. Read on the subject of presenting. Have your audiences give you feedback; their evaluations can be revealing. Identify main themes that keep coming up, and target those areas to improve upon.

In summary, keep in mind that the minute you enter the room or meet someone from your audience, you're on. At that moment you are setting the tone. Your confidence comes from preparing the content and practicing your delivery. Taking a step-by-step approach to include the strategies of assessing your audience, outlining the presentation, carefully crafting your introduction and close, designing your delivery, being ready to respond to questions, and practicing will make your presentations come alive. Your willingness to do the prework will enable you to become a stellar presenter. Who said technical presentations had to be boring? You're on—so break a leg!

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Sharing the Wealth &
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The
MAPPA
Trainers
Network

by Paul Schneller

Spreading

The MAPPA Trainers Network (MTN), sponsored by the Midwest Association of Physical Plant Administrators, helps facilities organizations in the seven-state region share training ideas, materials, and other resources that can improve plant operations. It is a way for members to avoid reinventing the wheel and to make the best use of their limited training time and money.

A total of 180 MAPPA institutions have appointed representatives to the network—Illinois, 33; Indiana, 32; Iowa, 16; Michigan, 38; Minnesota, 15; Ohio, 32; and Wisconsin, 14.

Sharing the Wealth: The MTN Data Base

The most tangible aspect of the network is its electronic component. A dedicated computer in the Training and Communications Office of the Physical Plant Department at Indiana University/Bloomington houses a data base containing eight training-related sections:

1. **Calendar**—Events for APPA, the APPA regions, other professional organizations, and higher education institutions and agencies.
2. **Contacts**—The primary contact person from each MTN member institution, arranged alphabetically by state, then alphabetically by institution.
3. **Directors**—The head of facilities at each MTN institution, arranged alphabetically by state, then alphabetically by institution.
4. **Library**—Training-related books, reports, and videos from APPA and regional groups, arranged by medium within each organization.
5. **Materials**—Commercially available or institutionally-developed videos, slide programs, texts, etc., arranged alphabetically within nine major content areas (see the Training Topics in Figure 1).
6. **Resource people**—Subject matter specialists available to help with physical plant training, arranged alphabetically within the nine content areas.
7. **Summaries**—Summaries of training courses or programs developed and/or conducted by member institutions, arranged alphabetically within the nine content areas.
8. **Vendors**—Commercial vendors of training materials and services, arranged alphabetically within the nine content areas.

Paul Schneller is coordinator of development, department of physical plant, at Indiana University, Bloomington, Indiana.

APPA Trainers Network Physical Plant Training Topics

Business/Administration

Accounting
Attendance-Keeping
Budgeting
Mail Operations
Office Management
Purchasing
Receiving
Service Request Systems
Stores

Computers

Data Base
Desktop Publishing
Disk Operating System (DOS)
Computer Assisted Design (CAD)
Graphic Design
Operating Environments
Personnel Records
Preventive Maintenance Programs
Spreadsheets
Statistics
Word Processing

Custodial

Carpet & Upholstery Care
Dust Removal
Equipment Care
Hard Floor Care
Planning & Organization
Recycling
Snow Removal
Soil Removal
Waste Removal

Energy Management/Utilities

Cable Systems
Central Chilled Water Facility
Central Heating Plant
High Voltage Distribution Systems
Steam Distribution/Condensate Return
Water/Sewer/Chilled Water Systems

Intrapersonal/Interpersonal

Assertiveness
Career Planning
Communication Styles
Customer Relations
Gender Relations
Listening
Meetings
Presentations
Problem Solving
Race/Ethnicity Relations
Telephone Use
Time Management
Writing
Effective Personal Skills
Training

Management/Supervision

Decision Making
Delegation
Finances/Budgeting
Goal Setting

Interviewing/Selection
Job Coaching
Managing Change
Managing Conflict
On-the-Job Training
Orientation (New Employees)
Performance Evaluation
Productivity Improvement
Project Management
Recognition/Reward
Role of the Supervisor
Strategic Planning
Teamwork
Union Relations
Leadership Skills

Safety/Health

Back Care
Chemicals
Driving
Emergency Preparedness
Environment
Ergonomics
Fire/Explosion
Laboratories
Materials Handling
Office
Personal Protection
Radiation
Substance Abuse
Wellness
AIDS Awareness
Asbestos Awareness
Scaffolding Erection
Closed Spaces, Tunnels

Secretarial/Clerical

Business English
Business Machines (Non-Computer)
Business Math
Dictation/Transcription
Filing
Forms Design
Keyboard Skills
Office Organization
Records Management

Trades/Technical

Carpentry
Electrical
Electronics
Elevator
Fire Systems
Grounds
Heating
Locksmith
Painting
Plumbing
Refrigeration
Roofing
Security
Sheet Metal
Transportation (Motor Pool)
Upholstery/Refinishing
Pest Control
Masonry

The data base contains entries submitted by the members themselves, as well as entries derived from scans of other sources by the IUB Physical Plant training staff, which maintains the data base. We solicited member input when the MTN was first established. Since then we have had one update, following a request for input from old and new members. A second update will be started this summer.

Not all of the eight sections of the data base are complete. Some have only a few entries, while others are well stocked.

Input is ongoing, as we obtain new information on events, personnel changes, and training resources.

Currently, Indiana MTN members can reach the data base on the SUVON system, thus avoiding phone charges. But non-Indiana members must pay phone charges to access the data base. IUB is looking into a way of eliminating the long distance charges. Of course, the cost for a

phone search of the data base to locate training materials or other information is still considerably less than the alternatives: developing something new when resources already exist for the asking, or hiking to the library to do a manual search of reference materials.

The MAPPA Trainers Network (MTN), helps facilities organizations in the seven-state region share training ideas, materials, and other resources that can improve plant operations.

Spreading the Word: Communications Capabilities

In addition to the data base, the IUB Physical Plant is the hub for the MTN Listserv. This is a way for members to enter electronic messages once and have them sent to all other MTN members simultaneously.

Members can also send messages to selected states in the MAPPA region, reaching *all* the members in one or more states. Once members get the Listserv addresses from IUB, they only need 1) access to a computer with communications software and a modem, and 2) an Internet or Bitnet address.

Nonmembers with the equipment, software, and address can also send messages to the entire MTN, but they cannot



Removing the Barriers: Accessibility Guidelines and Specifications

by Stephen R. Cotler, AIA

ISBN: 0-913359-59-9

\$45/APPA member institutions; \$55/all others.

The new Americans with Disabilities Act expands protections for individuals with disabilities and bars discrimination in employment and in access to public accommodations. The time frame for compliance is relatively short. New facilities to be occupied after January 1993 are to be designed for accessibility. Existing facilities were required to be accessible by January 26, 1992. Barriers in existing facilities must be removed, if removal is readily achievable and can be accomplished without much difficulty or expense. If not, alternative methods of providing services must be offered.

Removing the Barriers will assist you in surveying your campus and identifying barriers. More than 100 drawings are included to illustrate barrier-free entrances, hardware, floor plans, and more. The book outlines suggestions and cost effective solutions for providing accessibility.

CONTENTS:

Chapter 1: Site Accessibility	Chapter 7: Special Spaces and Equipment
Chapter 2: The Building Entrance	Chapter 8: Facilities Inventory and Evaluation
Chapter 3: Doors	Chapter 9: Achieving Accessibility
Chapter 4: Interior Circulation	Chapter 10: Additional Resources
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Chapter 6: Drinking Fountains and Pay Telephones	Index

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All orders must be prepaid in U.S. funds. Please add \$8 for shipping/handling. All international orders add 20% of subtotal (\$10 minimum shipping/handling charge). Enclose check (made payable to APPA) and mail to:

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receive messages sent through the Listserv.

Details on how to use the MTN LISTSERV and the data base will be included in a users guide to be distributed this summer by the IUB staff.

How Did We Get Here?

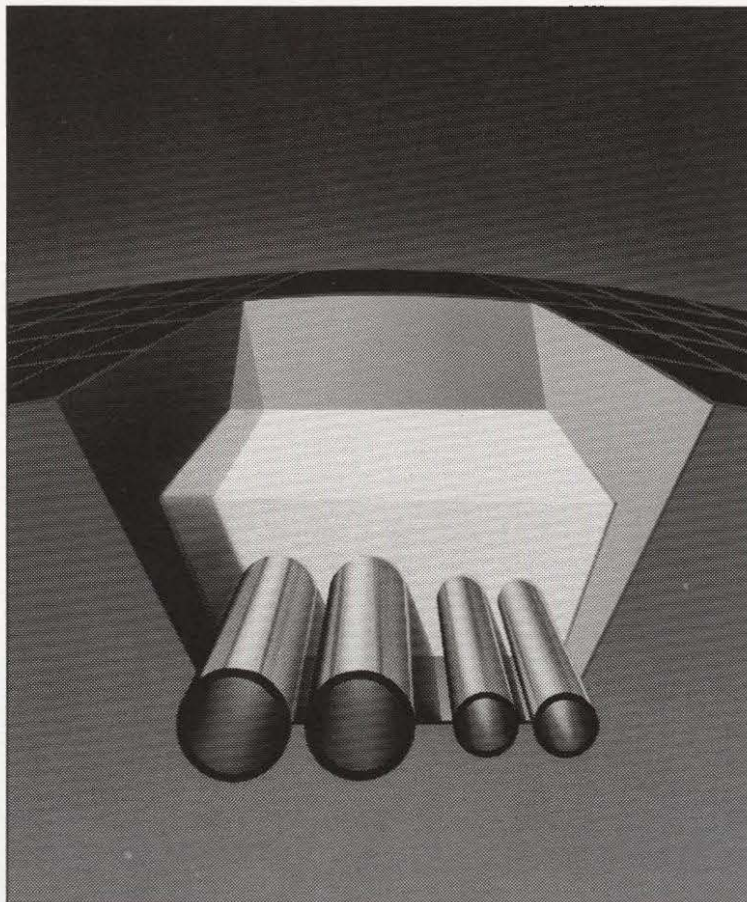
The MAPPA Trainers Network grew out of an existing group, the Big 10 Plus Friends Physical Plant Trainers. This loose-knit affiliation of trainers has been meeting annually since the early 1980s. It conducts a day-long information-sharing program, usually in the fall. The meetings are hosted by a different institution each year. In the beginning the meetings were held at the same location each year, an airport hotel conference room. However, the past three meetings have been held at or near the host institution's campus.

In 1989, the group began discussing the need for a broader membership base. We approached APPA with a proposal for a national trainers network. APPA executives liked the idea, but funds were not available to cover the costs of an organizational meeting. The group then decided to ask MAPPA for regional support. At the 1990 annual meeting, with strong endorsement from Gary Reynolds, Roger

Rowe, and other MAPPA leaders, MAPPA endorsed the project and authorized support for initiating the network. Indiana University/Bloomington's physical plant director, Gary Kent, agreed to house the electronic component of the network at IUB, and we were in business!

Since then, a core group of Midwest region trainers has met several times to develop a mission statement for the MAPPA Trainer Network and to accomplish the various organizational tasks of gathering information, publicizing the network, and keeping it rolling. We are still considering ways to expand the networking idea beyond MAPPA.

Indeed, many institutions in other APPA regions have contacted us about what we did and how we did it. We look forward to the time when all our institutions are linked electronically to share ideas, experiences, and resources on the broadest range of subjects relevant to facilities management operations. The technology exists, the need exists, and the desire seems to be accelerating. With input from APPA members and organizational leadership, we will no doubt find a way to marry those forces to produce a service that will help all of us serve our institutions even better. ■



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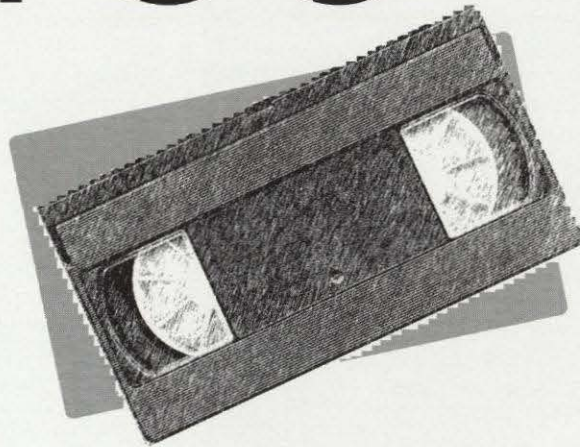
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Free Video



Establish Training

If the following advertisement came across your desk, would you throw it away?
"How would you like to have unlimited, free access to a \$15,000 videotape library on topics directly related to your occupational specialty?"

Of course you wouldn't. And if you are a member of ERAPPA, the Eastern Region of APPA, you already do have access to such a free library, even though you may not realize it.

In October 1989, Dick Engle, associate vice president for facilities at Rutgers, The State University of New Jersey, announced that he was going to establish a VHS video library for the exclusive use of ERAPPA members. Engle offered the Rutgers collection of tapes to the library in order to get the program started. He then asked all ERAPPA members to consider donating tapes that might be "sitting on their shelves" to the library as well. Engle expressed the concept of the program quite succinctly in his introductory memo, "Since videotapes are so expensive to purchase, yet are an enriching training tool, your participation in enriching this project through donated tapes will be most beneficial to all member institutions."

Tom Vacha is director of plant operations at the University of Delaware, Newark, Delaware. He is also APPA's vice president for professional affairs, a faculty member at APPA's Institute for Facilities Management, and a member of the publications advisory board.

Today, there are more than 100 videotapes available from the library. They are cataloged under the following headings:

- Supervisory development
- Custodial services
- Grounds maintenance
- Computer training
- Facilities maintenance
- Safety

There are a few simple rules that you must keep in mind:

1. You must be an ERAPPA member.
2. You may check out the videotape for two weeks, with an additional two-week extension available upon request.
3. You must pay the return postage and insurance.
4. You will be charged for the replacement value if you do not return the tape(s) in an acceptable condition.
5. Orders are not taken over the telephone.

In addition to her duties as the Rutgers facilities department personnel and training coordinator, Carol Trexler is the ERAPPA videotape librarian. She handles the administrative functioning of the program, including the periodic issuance of a library catalog. ERAPPA members who attend the Eastern Regional Annual Educational Conferences have seen the displays that Rutgers has set up, and they are amazed at the variety of material that they have at their fingertips and at such a nominal cost.

otapes!

ng a Video Library

by Thomas F. Vacha

To keep the ball rolling, the Eastern Region has made annual cash donations to the library, and several of the region's chapters have made cash contributions as well. Part of Trexler's responsibility is to solicit requests from member institutions for tapes that we ought to consider purchasing for the library, or to purchase additional copies of tapes that have a high request rate.

Trexler reports that she does have multiple copies of a few tapes purchased to keep up with the demand, but even so, she has a backlog of requests for some of the more popular topics. No sooner are they returned than they are sent right out to the next person on the waiting list. The catalog list is getting a little bulky these days, but Trexler does send a copy out to member institutions periodically.

I would hope that this article will stimulate you to go through your training files and see what kind of material is gathering dust on shelves, in file drawers, etc. If you come across a videotape or two, why not consider sending it to your regional videotape librarian. Or you may wish to consider developing a lending library within your own chapter or region, if one currently does not exist.

Who would have thought that such a meaningful program would have resulted from this very simple idea? We all tip our hats to Dick Engle for taking the initiative to get this program off the ground and for doing his part to enhance the educational resources of our organization. ■

Regional Videotape Lending Libraries

Three of the six APPA regions currently maintain a videotape lending library for their members. The other regions indicated that many campuses within their regions loan out videotapes that they have developed, but that no formal program presently exists.

For more information or to request a list of available videotapes within your region, contact the following.

ERAPPA

Carol Trexler
Facilities Personnel/Training Coordinator
Rutgers, The State University of New Jersey
Building 4117, Livingston Campus
New Brunswick, NJ 08903

MAPPA

Susan E. Rooney
Manager of Administrative Services
Miami University
Cole Service Building
Oxford, OH 45056

PCAPPA

Norma McKinnon
Office of Physical Plant Services
University of California/San Diego
La Jolla, CA 92093-0908

APPA'S SUPERVISOR AND DEVELOPMENT *Comes Alive*

by E. Lander Medlin

illustration by Sarah Johnson



Y TRAINING PROGRAM

APPA's 1990 Long-Range Plan identified human resource management as one of our profession's major issues. The belief statement stressed that "the growing complexity of the facilities of higher education, as well as the need for provision of a high quality of facilities management services of all kinds, requires the attainment of new levels of technical and professional proficiency in all areas of facilities management."

One of the areas that continues to be highlighted as a primary goal is the provision of a supervisory training and development program for all facilities personnel. Further, the U.S. Department of Labor's Apprenticeship 2000 Program highlights the growing concern over the future shortage of skilled trades workers and technicians.

Taken to its logical end, facilities management administrators will be directly affected by this shortage and therefore must be prepared to offer a variety of training and development programs targeted at training and retaining its best employees. Coupled with these issues is the fact that many of the nation's higher education institutions have been experiencing a financial crisis that has translated to an expectation of "doing more with less." This means we must begin the process of assisting our employees to not only work harder (to be more efficient and productive), but smarter (to be more effective) in the completion of their daily work.

An important measure of our professional success will be

Lander Medlin is assistant director for administration, department of physical plant, at the University of Maryland/College Park. She is a faculty member at APPA's Institute for Facilities Management.

our ability to manage our employees more efficiently and effectively in the delivery of total quality services. Front-line supervisors play a key role in every facet of the facilities management organization's success in attaining total quality. Since front-line supervisors are the linchpin, development of their supervisory skills can no longer be taken for granted.

APPA's largest membership body—small colleges and universities—has stressed time and again the need for a generic supervisory training and development package. The small institutions' needs are much different than that of its larger "sister" institutions. Small institutions do not have training managers per se to deliver continuous training programs on-site. This effort normally becomes the added responsibility of several people in the organization—in some cases the director of facilities. Also, small institutions do not have an adequate funding base to purchase any of the more costly, higher quality supervisory training packages available in the marketplace at the present time.

Therefore, an effective supervisory training and development program, inclusive of the appropriate training materials and guides, represents one of the biggest voids we have in facilities management. There just isn't a supervisory training package available in the marketplace that is generic enough for the range of employee groups that comprise the facilities management environment—maintenance trades, grounds maintenance, custodial services, and administration personnel. Therein lies the problem!

Nothing new, you say? Well, think again. APPA, in conjunction with Ogden Services Corporation, has formed an alliance to develop and deliver a comprehensive supervisory training and development package specifically designed for the needs of facilities management employees.

The purpose of the APPA/Ogden Services supervisory



training and development package is to provide a comprehensive set of training materials in the form of a leader's guide, participants workbook, and videotapes for off-the-shelf, in-house delivery of a full complement of supervisory skills from beginning to advanced. This package includes such topic areas as the role of the facilities management department in the higher education institution, the role of the supervisor in the organizational structure, communication skills,

customer service, goal setting, management styles, process improvement, interpersonal relations, organizational skills, and how to motivate, train, and discipline employees.

I believe all of us would agree that this package is both necessary and timely. Delivery in this particular format, as opposed to an APPA-sponsored seminar program, will enhance our ability to provide supervisory training when it is needed and at regular intervals in our own institutions, thereby reducing the cost of delivery and simultaneously increasing

the number of employees who are able to actively participate.

As background, Ogden Services Corporation provides similar facilities services in the private sector to such areas as airports and hospitals and, to a smaller degree, higher education. Given Ogden Services' extensive, long-standing involvement in APPA programs, the alliance of APPA and Ogden Services Corporation highlights the need for the type of public/private cooperative relationships that have begun to emerge across the country during the 1990s.

For a preview of coming attractions, Ogden Services' representative and coordinator of the project, Dick Cortes, will be presenting one of the package modules at APPA's annual meeting this July in St. Louis. So as not to miss this opportunity to preview the package's design, content, and delivery mechanisms, make sure you mark your calendar to attend one of Ogden Services presentation sessions on Sunday, July 25 from 9:00-11:00 a.m. or 1:00-3:00 p.m. If you cannot attend, please do not hesitate to call the APPA office at 703-684-1446. Kathy Smith, director of educational programs, can provide you with more detailed information. ■

Editor's Note: The APPA/Ogden supervisory training package costs \$875, plus \$15 for shipping and handling. Ordering information will be coming out soon.



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APPA Answers

Maxine Mauldin

In today's economy, layoffs and early retirement have become familiar ways of cutting back on budgets by companies and many of our higher education institutions. Taking an existing position and adding more responsibilities to it has become standard procedure. Many supervisors found their employees willing to accept the new challenges and job responsibilities, but that they lacked the needed know-how in some areas. The solution to making this work is more training. Through workshops, seminars, and training manuals (with little cost to the institutions), this is an important option.

APPA's International Experience Exchange data base can provide you with a printout of institutions, within your region and/or similar to your institution's FTE size, that primarily trained their employees with their own physical plant staffs. Some of the training areas included on the data base are as follows:

- custodial
- grounds
- trades
- supervisors
- security
- first aid/CPR
- defensive driving
- asbestos removal
- hazardous materials handling

With this printout, you can follow up with an institution in your area as to the scope of the training performed by in-house personnel and the current

level of employee productivity. The data base can also provide you with a list of institutions that choose to get training from outside vendors. By contacting these institutions you could find out the cost involved as well as the level of training received by the employee.

Your response for specific types of training might also include contacting other associations or organizations to obtain training materials or assistance. A sampling follows:

- Association of College and University Housing Officers-International, 614-292-0099 (maintenance and security)
- Association of University Architects, 404-371-6331 (design and construction)
- Campus Safety Association/National Safety Council, 708-775-2360 (regularly scheduled safety training) or 708-775-2028 (customized programs)
- CAUSE, 303-449-4430 (information technology and management)
- College and University Personnel Association, 202-429-0311 (human resources)
- Professional Grounds Management Society, 410-584-9754 (grounds)

APPA's subscribing members and annual meeting exhibitors are another excellent resource for consulting information on training. Contact Diana Tringali at the APPA office for a current list.

Finally, you can also contact the APPA chapters or institutions in your geographic area for various types of training programs used on their campuses.

WHY DON'T YOU GO AHEAD AND TRAIN YOUR SUPERVISORS?

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Here are the tapes:

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Functions of A Supervisor's Job

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|---|----------|-------|-------|
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Maxine Mauldin is APPA's information services manager.

Data Base Update

Howard Millman

Computer Aided Instruction: The Brain in the Box

Do you remember the adage that says if you think education is costly then consider the cost of ignorance?

Facility management is a business. Like most such businesses it is governed by a quantity/quality relationship. The greater the amount of personnel, dollars, and expertise the higher the quality of the services you deliver.

Not!

The quantity and quality of the services you deliver to the academic community, your customers, depends as much on your managerial skills and the talents of your staff as they do on your other resources.

So how do you increase the ambient skill levels in your department? By interactive, nontraditional training. Traditional training in facilities management involved handing out videotapes or importing trainers. Videotapes are inexpensive and convenient, but are sometimes inflexible. Plus, it is often difficult to measure their impact. Trainers are accountable and adaptive, but their quality varies significantly. In addition, prescheduled training sessions can prove disruptive to work schedules and retreats to conference centers can prove costly.

Howard Millman is a systems integrator with twenty-five years of experience in facility management. He assists universities and hospitals in planning their purchase, upgrade, or installation of information management systems, including maintenance management systems. He is based in Croton, New York.

The good news is that computer aided instruction (CAI) combines the best of both techniques because the cost of training alternatives are plummeting and effectiveness is skyrocketing.

First, let's immediately vilify the static, multiple choice, Q&A yawners. They presented as much fruitful, intellectual learning experience as does picking lint off your lapel. We're talking about quality CAI applications. Courseware. Applications that employ a technology broadly referred to as multimedia.

Admittedly, that term has been increasingly abused recently, but it means integrating text, video, advanced graphics capability, voice, and music to drive home a point like no other technology can—short of a direct IQ transplant, anyway.

These integrated components, in addition to enlivening the lesson, call more of the trainee's senses into play. That translates into a higher degree of retention. In fact, a 1989 study commissioned by the Department of Defense revealed that (adult) students retain about 20 percent of what they read, 35 percent of what they read and hear, and a whopping 60 percent of what they read, hear, and interact with.

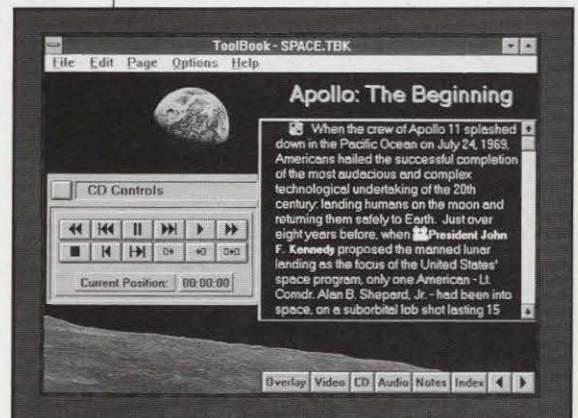
Creating Affordable Training Applications

Does interactive, multimedia training software sounds like a near perfect answer? Well, almost. The potential downside is, what else, cost. Development costs can escalate to an intolerable level. But here too, knowledgeable customers can cap their costs by identifying staff's training needs, setting attainable educational objectives, and correlating the content to the need. Then purchase your authoring software.

Authoring software is the "electronic glue" that links all your text screens, audio, video, and graphics together and then overlays it with an easy-to-use menu so the trainee can navigate through the finished training application. Commercial multimedia authoring software can cost from \$5,000 to \$10,000. They are heavy-duty products for high production environments. You will want more affordable authoring software.

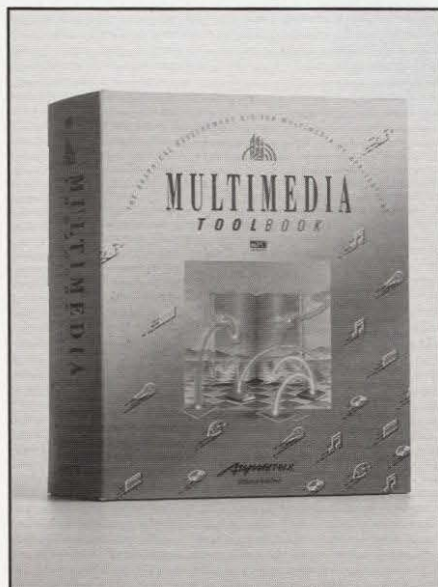
One high quality, easy-to-learn-and-live-with authoring package comes from IBM. IBM's LinkWay Live! is a DOS-based, multimedia authoring tool that will even run on vintage 286 computer systems. LinkWay Live! lists for \$280 and includes a paint program, text and font editor, sound capability, and simple animation. DOS-based systems make fewer demands on the host system hardware and execute faster than Windows applications. Windows applications, conversely, are usually snappier looking and will run on a far greater variety of high-end computers without a whole lot of tweaking or hand wringing.

Gold Disk's Animation Works Interactive combines cel-based, 2-D animation, graphics, digital/analog audio, text and external device control (such as a laser disc player or a VCR), plus basic special video effects. Cel animation is similar to the illustration techniques perfected and still popular with professional cartoonists and animators. AWI requires Windows and at least a fast 386DX machine, with a 486SX rec-



ommended. You will need a 150-megabyte or larger hard disk, an SVGA color monitor, and a sound card plus bookshelf sized speakers. Listing for about \$495, AWI will create some fairly sophisticated training products for you.

Finally, Multimedia ToolBook, from Asymetrix, enables you to create interactive training applications by simply pointing to and clicking on text, graphics, and video clips. ToolBook bundles in 250 multimedia "objects," so you're off to a running start shortly after you shake the \$695 disks out of the box. Since it is Windows-based, ToolBook's



hardware requirements parallel those of AWI. LinkWay Live!, AWI, and ToolBook are available at discounted prices from Multimedia at 800-228-ULTI.

If all this sounds a bit too advanced, yet you're intrigued with the concept of customized training applications, here is a low-cost, low-tech strategy devised by a residence hall property manager at a university in Michigan. To create his training aids, he writes text to his computer screen with a word processor. He often includes simple clip art or illustrations. Next, he captures that text and graphics with Hijaak, a nifty \$150 screen capture and graphics conversion program from Inset Systems. Once captured and saved to disk, he simply prints the captured screens and binds them into a booklet. Next he creates a script using those captured screen images and develops an interactive training disk. Inset Systems can be reached at 800-376-6738; fax 203-775-5634.

Regardless of the authoring software you choose or the platform you deliver it on (DOS, Windows, OS/2, Macintosh), focus on creating a collaborative, team-oriented approach to the educational experience. Let the trainee control the course of the lesson. The computer should guide, not dominate the learning process. Furthermore, whoever develops the courseware needs to remember that many of the trainees are uncomfortable with computer technology.

When all is done you may want to marvel at the program instituted by the U.S. Army's Infantry School at Fort Benning, Georgia that uses 500 specially-modified Nintendos for marksmanship training. The Army's Nintendos use a light pen attached to a non-firing

M-16 rifle. This allows the interactive system to provide feedback to enhance traditional marksmanship techniques such as breathing, trigger squeezing, and a fast way of reducing the aggregate level of ignorance in this imperfect world. ■

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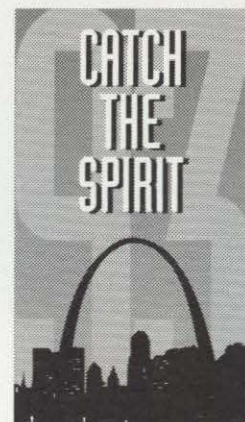
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Training

Getting It Right, by Joe Carbone. Ithaca, NY: Front-Line Supervisor Press, 1992. 80 pp. \$7.50, softcover.

This book would be extremely beneficial to people desirous of becoming a supervisor or who have recently been appointed to that position. It incorporates all the attributes needed to become a good supervisor as well as the "pitfalls" of the role—all condensed in an easy-to-read, eighty-page book.

To those who have been supervising for many years, this information may appear to be old hat as much of it has come across your desk in bits and pieces, though I was reminded of some good techniques that I had forgotten over the years.

To those who are new to supervision, particularly those promoted from within, this will prove to be a basic guide of the do's and don'ts during your formative months in your new role. This certainly whets one's appetite to secure more information on management techniques that may be obtained through videos, films, books, seminars, etc.

Overall the book is informative and very easy-to-read, making it applicable to all levels of supervision.

Getting It Right is available from Front-Line Supervisor, Publications Department, P.O. Box 4019, Ithaca, NY 14852-4019.

—Peter Dufour
APPA Emeritus Member
Old Town, Maine

Management

The Working Person's Survival Guide, by Steve G. Gabany, Ph.D. Terre Haute, Indiana: Hunt & Peck Publishing, 1990. 200 pp. \$11.95, softcover.

It has been the experience of each and every one of us to serve as a subordinate to someone else at one time or another. As a matter of fact, a vast majority reading this review are potentially working for someone else right now. Statistics show that only about 20 percent of the American work force is self employed or working as their own boss.

While many would perceive running their own business as the ideal, it is a privilege enjoyed only by a few. The fact is, we all have bosses, and chances are that our bosses have bosses as well. We are all accountable to someone above us on the vocational ladder.

Steven G. Gabany addresses the American norm of working for another in his book *The Working Person's Survival Guide*. He begins his treatment of the topic of working for someone else by laying some interesting groundwork. Namely, the statistics surrounding the survival of existing in an environment where we must work for a boss. Shocking as it may be, the stress caused from being an employee can weigh heavily on a person's health and mental well-being. Gabany states that survival in this setting is a must; it can literally be matter of life and death.

In an effort to give an alternative to stress and burnout, Gabany suggests the reason we labor is Money! He states repeatedly, "We work for money!"

Further into his treatise he addresses topics such as the quest for the American dream, coworker relationships, money, raises, promotions, job security, women in the workplace, labor unions, and financial stability.

The *Working Person's Survival Guide* is a book for anyone faced with the pressures of working for someone. Since it is the norm and not the exception, it does seem fitting that self-help books should be written to address this pervasive concern. Although Gabany points out some interesting statistics and utilizes some infamous quotations, I found the book equivalent to a seminar. Rightly so, for the book is based on seminars that Gabany has held on the subject.

Reviewing the matter from the perspective of a confirmed workaholic, I found the text fatalistic. The author served to perpetuate the downward trend that employees probably are already experiencing with regard to staying motivated in the workplace. I cannot agree with the author when he claims that money is the only motivator. It certainly is a strong and essential one, but as Deming claims, not the primary one. I realize that sounds grossly administrative,

but I feel justified in the comment since I started in facilities management as a utility operator and now run a department. Money was a factor, but not a prime motivator as my career moved forward.

Furthermore, if we reduce our efforts down to simplistic terms, as Gabany has done, we eliminate American ingenuity, pride, and the work ethic.

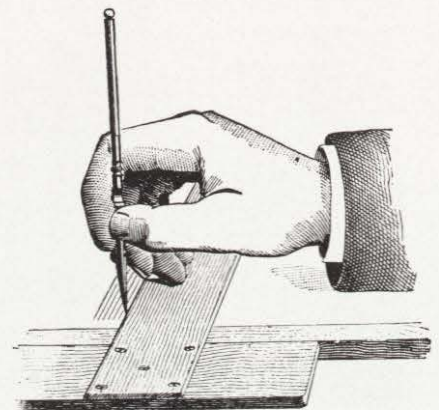
Admittedly, working for another has its pressures. It is stressful. But there is a balance. As the saying goes, "Lord, give me the strength today to change the things I can change and accept the things I cannot." Hunt & Peck Publishing, 585 Woodbine Drive, Suite 255, Terre Haute, IN 47803.

—Doug Cooper
Assistant Director
Residence Hall
Facilities Management
Montclair State College
Upper Montclair, New Jersey

Space Planning

Time-Saver Standards for Interior Design & Space Planning, by Joseph De Chiara, Julius Panero, & Martin Zelnik. New York: McGraw-Hill, Inc., 1991. 1,160 pp. \$95, hardcover.

This massive volume places itself by size, price, and content in competition with such notable works as *Architectural Graphic Standards*, *Time-Saver Standards* for



Architectural Design Data, and the recently released *Interior Graphic and Design Standards* by Reznikoff. The three authors are all well known and respected for their individual writings. De Chiara has collaborated on several *Time-Saver Standards*

books for McGraw-Hill. Panero and Zelnik have done considerable work on anthropometrics that comprise their fine work, *Human Dimension & Interior Space*. With this kind of background I expected great and wonderful things in this book. I was more than a little disappointed.

Time-Saver Standards for Interior Design & Space Planning is organized into five major sections: planning and design of interior spaces, with a strong emphasis on residential; construction details and finishes; architectural woodwork; specialties; and general reference. The first section is the largest, nearly half the book, and covers the history of furniture, dimensions of furniture, layouts of typical spaces, as well as actual working drawing details. The use of actual examples is probably one of the strongest elements of the book. However, some of the details, when reduced to fit the printed page, reduce the hand lettering of the original to microscopic size and are too difficult to read. The spaces represented in this section cover residential, some 200 pages; office, about eighty; hospitality, about eighty; retail, about forty; and public toilet and restrooms, about forty. The parts devoted to office spaces are probably the most rel-

evant parts of this book for those of us operating in an institutional setting.

The second section of this book discusses doors (windows are in the specialties section along with window treatment), walls and partitions, stairs, fireplaces and mantles, floors and ceilings, and lighting. As an example, let's look at the lighting material. If we wish to know about lampshade heights, it's in here. If we wish to know about incandescent lamp types, shapes, and base configurations, it's in here. We can find a page of tables with light level recommendations. We can refer to another page to find out about new types of lamps compared to incandescent—a grand total of nine, in fact, and a few words about each. If we were to need more information than this, however, we would need another resource.

The woodworking section consists of molding profiles, some twenty pages, which follow the one page devoted to different wood finishing methods, themselves each reduced to a few words. The woodworking details are a mixture of working drawing examples and cuts from both old *Time-Saver Standards* and periodicals that pre-date *Progressive Architecture*. Does anyone remember the magazine *Pencil Points* of the

1920s and 1930s? If you do, then some of the illustrations may look familiar.

The specialties section has a reasonably good presentation of plants and planting in the first subsection. Several pages list individual plants along with their care and feeding. The signage subsection appears to be something usually found in *Sweets Catalog*. However, any mention of the expanded requirements for handicap access signage was lacking. That would have been quite helpful and timely.

If your institution is planning an auditorium space, a large amount of seating and sight line information can be found in this section of the book. Acoustical data here would have been helpful.

Color theory is covered in another subsection, complete with color wheel and color usage charts. Unfortunately, the book is completely in black and white. That alone makes effective use of this material difficult.

Some specialty items, such as postal boxes, appear to be taken from photocopies that were probably in color, which leaves a lot of mottled gray background. Those of us who have had to pull together drawings for printing at the eleventh hour will be reminded of last minute "stick-ons" that resulted in ammonia prints with just this type of added background.

Finally, within the last few pages of the last section, labeled General Reference Data, we find material relating to handicap access and clearances. There is also one page devoted to the topic of acoustics, near the several pages describing fasteners and showing full-size nail profiles.

If you were just starting an office, or if your office was lacking in resource material, you might do well to obtain this book as your central volume upon which to build. If, on the other hand, you already have a copy of any *Architectural Graphic Standards* from 1950 or later, any copy of *TimeSaver Standards*, or even the old *Don Graff's Data Sheets*, you probably already have the majority of the information found in this book.

I was extremely disappointed in the authors. To bring out a new book heavily filled with decades-old material, completely lacking any new topic treatment or current material presentation, does a disservice to all professional readers. I would hope that the publisher undertakes a careful and more current revision of this work. In other words, wait for the second edition, should there be one.

This book is available from McGraw-Hill, Inc., 11 West 19th Street, New York, NY 10011.

—Jens Brammer
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Upcoming Job Corner deadlines are **August 10** for the September issue, **August 25** for October, and **October 10** for November. Closing deadlines for job announcements are posted at the request of each institution. In some cases, deadlines may be extended by an institution. APPA encourages all individuals interested in a position to inquire at the institution regarding its closing/filing date.

Send all ads, typed and double-spaced, to Diana Tringali, Job Corner Advertising, APPA, 1446 Duke Street, Alexandria, VA 22314-3492. Or send your ad via fax 703-549-APPA (703-549-2772). Call 703-684-1446 for more information or to receive a Job Corner brochure.



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LARAMIE COUNTY COMMUNITY COLLEGE DIRECTOR OF PHYSICAL PLANT

Laramie County Community College (1968) is a comprehensive community college with 250 full-time faculty and staff serving approximately 5,500 (3,000 FTE) students. The college has a modern, 270-acre campus in the capital city of Cheyenne, Wyoming, serving an area population of 72,000, including F.E. Warren Air Force Base. Cheyenne is located 100 miles north of Denver, Colorado, and is near areas providing skiing, hiking, hunting, and fishing.

Responsibilities: The college is seeking an experienced person to administer its renovation; building custodial services; grounds keeping; parking lot maintenance; motor pool and vehicle maintenance; mail; and warehouse. The college consists of 20 major structures valued at \$27 million. The position reports to the dean of business services and directly and indirectly supervises 45 full-time managerial, technical, and service personnel, plus additional part-time, temporary, and work study employees.

Qualifications: A bachelor's degree is required, preferably in management, business administration, engineering, or architecture. A master's degree is preferred. Five years of administrative experience in business, public administration, engineering, or a related physical plant capacity is required. An advanced degree may be substituted for some experience. Experience in physical plant administration at an educational institution is preferred. Strong communication, management, organization, and supervisory skills are required.

Compensation: Salary range for this position is \$36,785-\$51,500. Starting salary depends on education and experience. Excellent benefits.

Application closing date: Screening will begin immediately and continue until position is filled.

Starting date: Anticipated starting date will be on or about September 1, 1993.

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1. A letter of application indicating how education and experience relates to position.
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3. Official Application for Employment form from LCCC. (Application form will be sent to applicants upon receiving letter and resume.)

Submit materials to: Bruce Curl, Director of Personnel, Laramie County Community College, 1400 East College Drive, Cheyenne, WY 82007.

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ENVIRONMENTAL HEALTH SERVICES DIRECTOR WASHINGTON STATE UNIVERSITY

Effective date: September 1993.

Position summary: The environmental health services director administers a comprehensive health and safety program for the main campus in Pullman, branch campuses, and research stations. Program areas include occupational health, air, and water quality; sanitation; and hazardous chemical waste management (currently under a Part B Treatment, Storage, and Disposal Permit). This position reports directly to the vice president for business affairs.

Duties:

- 1) Direct the environmental health services program.
- 2) Develop and implement policies, procedures, and training programs that will ensure compliance with federal, state, and local regulatory requirements. Maintain all required records, licenses, and permits.
- 3) Serve as liaison with state and federal regulatory agencies and the media on environmental issues.
- 4) Develop and administer operating and capital budgets related to environmental health and safety.
- 5) Directly supervise a hazardous waste manager, occupational health manager, sanitation supervisory, branch campus/research station industrial hygienist, secretary, and fiscal technician.
- 6) Conduct risk assessments and advise administrators, faculty, staff, and students on the mitigation of environmental and health risks.

Qualifications: Master's degree in environmental science/environmental engineering, or a closely related field with progressive experience in the management of environmental health programs required. Thorough knowledge of environmental regulations, and excellent managerial, fiscal, interpersonal, and communication skills required. Preference given to candidates with experience in an academic research setting.

University: WSU, a multi-campus system with a student enrollment of 17,000, is the state's land grant university and is a comprehensive academic/research institution with nine colleges and a graduate school. Campuses are located in Pullman, Spokane, Vancouver, and the Tri-Cities, with agricultural research stations located throughout the state.

Application deadline: July 16, 1993, or until position is filled.

Applications: Letter of application; resume; and names, addresses, and telephone numbers of at least three professional references should be directed to:

Search Committee Chair
Environmental Health Services Director
432 French Administration Building
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Coming Events

Contact the APPA Educational Programs Department at 703-684-1446.

Jul. 25-27—**Educational**

Conference and 80th Annual Meeting. St. Louis, MO.

Aug. 22-27—**Institute for**

Facilities Management. Milwaukee, WI.

Regional/Chapter Meetings

Sep. 6-7—**Facilities Management: International Problems, Local Solutions.**

Surfers Paradise, Queensland, Australia.

Sep. 17-20—**CAPPA.** Dallas, TX.

Contact: Kirby Vahle, University of Texas/Southwestern Medical Center, 214-688-2400.

Sep. 19-21—**RMAPP.** Alberta,

Canada. Contact: Gordon Bulat, University of Alberta, 403-492-4210.

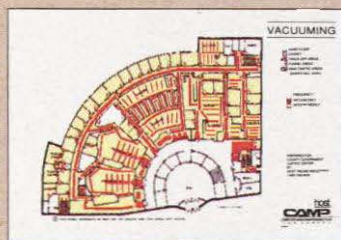
Oct. 3-6—**ERAPPA.** Saratoga

Springs, NY. Contact Richard Drury, Hofstra University, 516-560-6623.

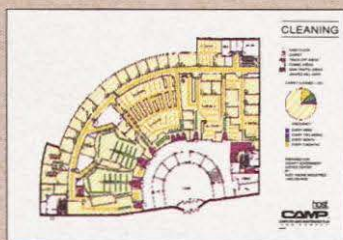
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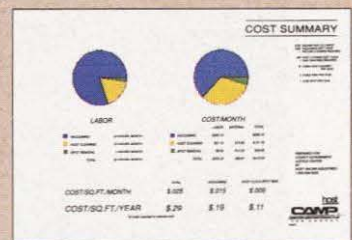
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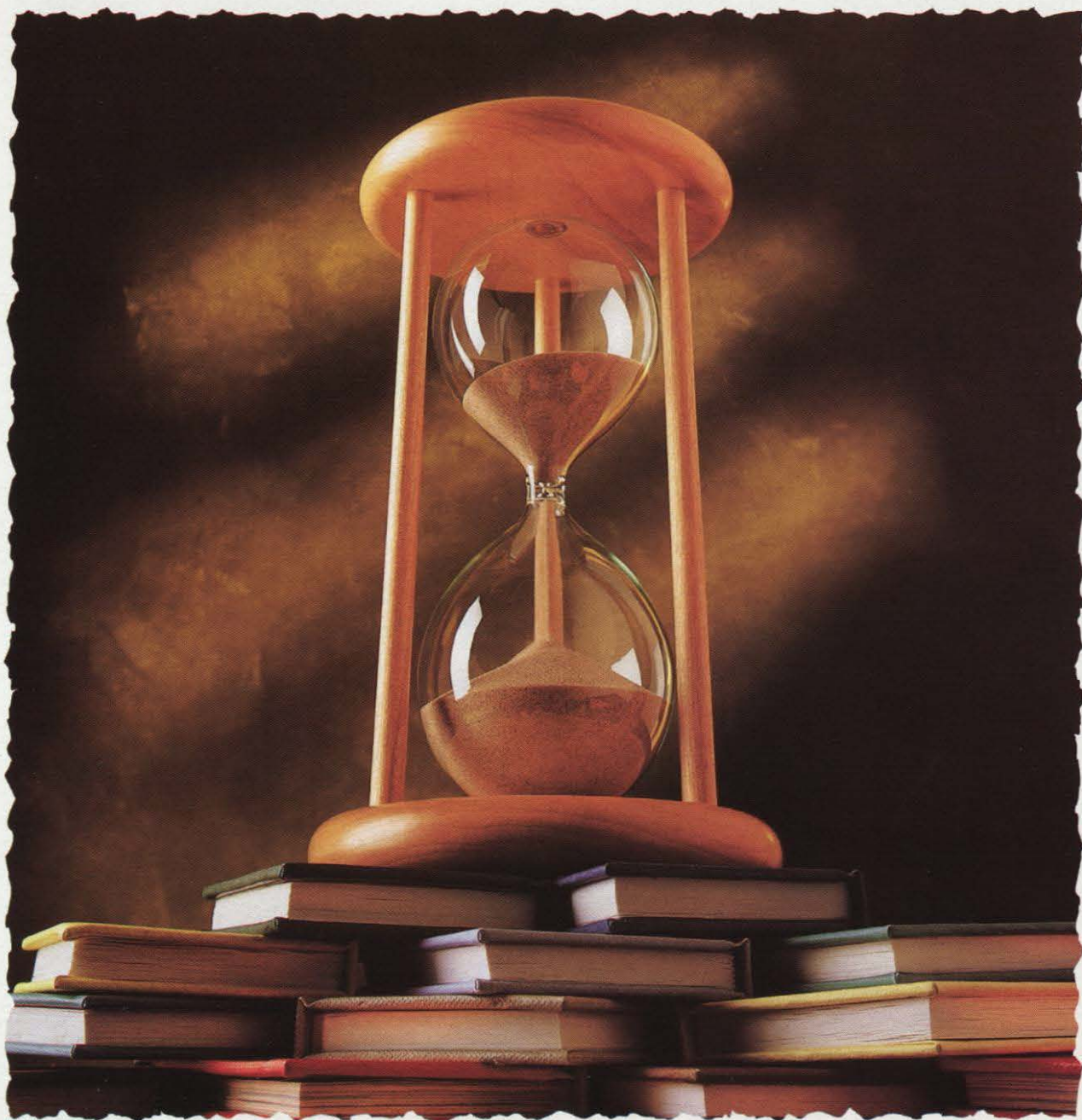
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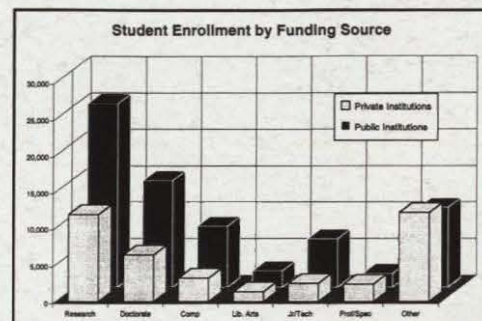
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