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NUMBER 6

# Facilities Manager

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

A close-up portrait of Pete van der Have, a middle-aged man with dark hair and a mustache, wearing a maroon shirt and a patterned tie. He is smiling slightly and looking towards the camera. The background is blurred, showing some greenery and a building.

A Profile of  
President  
Pete van der  
Have



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# Facilities Manager

The Official Publication of APPA, The Association of Higher Education Facilities Officers

Volume 13 Number 6

November/December 1997

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## From the Editor

Steve Glazner

### President

Pete van der Have had to hit the ground running last July. The death of President-Elect Tom Vacha just one week before the annual meeting left the APPA Board of Directors with an unusual dilemma—how to select as APPA's new President a member active in the association and knowledgeable about its current programs, yet who can begin serving immediately without the benefit of an entire year preparing as President-Elect. Pete is definitely the right person at the right time. Go to page 12 and read more about President van der Have and his plans for APPA this year.

If you have attended one or two of APPA's Institute for Facilities Management, or if you are considering attending in the future, we urge you to read Gary Reynolds' article on the Institute redesign. Created now as four core programs, the topics of the Institute follow the four volumes of the third edition of *Facilities Management: A Manual for Plant Administration*:

- 1) General Administration and Leadership;
- 2) Maintenance and Operations of Buildings and Grounds;
- 3) Energy and Utilities Systems; and
- 4) Facilities Planning, Design, Construction, and Administration.

We truly enjoyed the keynote speech at the Orlando annual meeting last July. And while nothing can improve upon actually hearing the presentation in person, we hope you

will enjoy the excerpts presented in this issue from Roger Dow, "customer enthusiast." Sorry, we couldn't include the clips from *I Love Lucy* and *Five Easy Pieces*.

Roger Rowe's article on risk assessment provides a valuable guideline to help the facilities leader to focus on the important safety concerns that fall within their responsibility. Dan Krone of the University of Virginia provides an interesting case study on water chemistry controls for swimming pools.

This issue marks the last appearance of the Strategically Planning column, written by James and Susan Cole. Their six-part series took the reader through a step-by-step strategic planning process and provided a number of valuable insights for the facilities professional to consider. APPA plans to publish the full series on the website <[www.appa.org](http://www.appa.org)> as a "Web only" publication for your future reference.

Be watching for the January/February issue of *Facilities Manager*. Our focus will be on the new APPA Professional Leadership Center, with full explanations from Doug Christensen, Bill Daigneau, and Charlie Jenkins. In the meantime, we hope you enjoy *this* issue. 📖

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*The signing of the APPA/CSI alliance. From left, Robert Molseed, CSI President; Gregory Balestrero, CSI Executive Director; Wayne Leroy, APPA Executive Vice President; and Pieter van der Have, APPA President.*

## APPA Forges New Alliance

The Construction Specifications Institute (CSI) and APPA have agreed to a five-year alliance to provide the members of both organizations enhanced services and advance the technology and quality of building construction and management in North America. Representatives of the two organizations signed a memorandum of understanding that calls for CSI and APPA to work together on several initiatives for developing joint offerings, providing access to each other's products, programs, and services, and sharing information.

CSI and APPA agreed to apply their combined strengths, share mutually beneficial information, and facilitate access to each others products and services. The leaders of the two societies described the alliance as a win-win situation.

CSI is an individual membership society that provides technical information and products, continuing education, professional conferences, and product shows to CSI's more than 17,500 members which include architects, engineers, contractors, specifiers

of construction products, suppliers of construction products, building owners, and facilities managers. Founded in 1948, the society is headquartered in Alexandria, Virginia, and has 140 chapters nationwide.

## New Proposals May Affect Research Facilities

The White House's Office of Management and Budget proposed changes in its rules for reimbursing universities for the overhead costs of conducting research. Among the changes are tighter controls on payments for building and renovating research facilities. Federal research grants include money for the costs that can be directly tied to an individual project plus an amount for the

overhead that the research generates, such as expenses for utilities, libraries, and building maintenance.

A major issue and a significant change in the proposal would be the use of a new threshold to decide whether the cost that a university reports for building or renovating a research facility is reasonable. Universities that report costs per square foot that are more than 125 percent of the regional median would be required to submit additional information to justify the higher bills. If the federal officials in the negotiations were not satisfied with those explanations, they would limit the rate of reimbursement accordingly.

The new threshold would apply to new buildings that cost more than \$10

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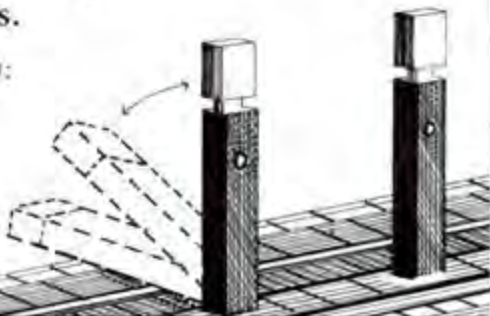
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million or renovations of more than \$4 million. Also, it would apply only to buildings in which a significant amount of federally sponsored research takes place.

The proposal also suggests changes in the way that universities are reimbursed for utility expenses. About 50 universities that have been relying on their own special studies to calculate the government's share of their utility costs—instead of using the government's standard method for figuring them—would be required to use the standard method and then increase the rate of reimbursement by a uniform percentage.

### Auxiliary Services Means Big Money

A report published by the National Association of College and University Business Officers (NACUBO) states that auxiliary services are far more than just campus amenities; they are strong sources of revenues for most

colleges and universities. The Financial Status of College and University Auxiliary Activities survey analyzes data for the fiscal year ending June 30, 1995 and concentrates on five key areas: food service, bookstores, parking, housing, and soft drink beverage contracts.

Private colleges and universities fared better than public and community colleges in the amount of auxiliary revenue generated. And, in several cases, the difference in the net margin between private and public institutions for a particular auxiliary function were substantial. Private colleges generated a much higher margin, 29 percent, for food service for college housing, than public colleges which generated a margin of 6 percent.

Copies of the survey can be obtained by calling NACUBO's publication desk at 202-861-2560. ☎

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by H. Val Peterson

**Under the** pressure of getting the work done, facilities managers rely heavily upon the technical aspects of operating and maintaining campus facilities and infrastructure. We find ourselves caught up in determining the appropriate response to questions like:

- Is the sequencing of the chillers operating in the central plant providing for optimal plant efficiencies?
- Does the vertical cleaning mode of custodial service provide the best cleaning potential?
- Is the decision to install a single-roof the best of all the options presented?
- In our remodeling projects, what changes need to be made in our project tracking system to better coordinate the various phases of the work and the efforts of the trades?

While the impact of technical decisions cannot be minimized in a successful facilities management organization, often it is the human relations aspect of the job that ultimately determines success or failure. Employees may well have the necessary technical skills to do almost anything that is asked of them, but it is in the process of asking, assigning, motivating, and giving recognition to employees who do the work that the real successes and failures are assured.

Human Relations is the study of human problems arising from organi-



zational and interpersonal relations (at least according to Webster). I was recently reminded of that subject when I read a few short sentences that combine to form a brief systematic work called "A Short Course in Human Relations." These few lines caused me to reflect upon their application as we approach our everyday jobs, even though they are equally applicable to family interaction and other interpersonal relationships. The short course is as follows:

- *The six most important words are "I admit I made a mistake."*

Since this short course deals with humans we realize that "to err is human" and it should come as no surprise that each of us make mistakes. The biggest mistake anyone can make is to deny their mistake in the first place. As a facilities manager, I recognize that mistakes will be made in some of the work that is done by our various departments. Our customers also realize (sometimes begrudgingly) that we make mistakes. Sometimes too much unproductive energy is

spent in trying to justify or cover up mistakes. That energy is best spent in resolving the problem. It is far better to admit to mistakes and get on with solutions than to attempt to cover up mistakes and prolong the agony.

- *The five most important words are "You did a good job."*

Sometimes when a subordinate or coworker does a good job we make the assumption that they know that we know that they did a good job. Maybe the one-on-one relationship atmosphere within your organization is such that one must assume that they did a good job unless someone tells them they didn't. Don't rely on that assumption. It could be wrong. It gives the ego a tremendous boost to actually hear someone say "you did a good job." It makes people feel better about each other too. Job satisfaction arises from a variety of factors, not the least of which involves the recognition of accomplishments.

- *The four most important words are "What is your opinion?"*

Have you ever had the experience of sitting together as a group in a "brainstorming" session and then using the group's dynamics to solve a problem? If you have, no doubt you have discovered that most people have good ideas. In these instances, you also find that the whole is greater than the sum of the parts or, in other words, a group of people working together can come up with better ideas and solutions to problems than if each person came up with ideas and solutions independently. I view it as an honor to be asked my opinion and others do too. Asking for a person's opinion tells them that they are valued for their ideas and that their opinion matters. Don't ask for opin-

*Val Peterson is director of facilities management at Arizona State University, Tempe, Arizona, and a past APPA President. He can be reached at [valpeterson@asu.edu](mailto:valpeterson@asu.edu).*



ions, however, if you are not serious about accepting the opinion on its own merits.

- *The three most important words are "If you please."*

Civility is best demonstrated through requests rather than demands. Respecting the feelings of others is a common courtesy. Courtesy refers to considerate behavior toward others, not an outmoded stiff and formal politeness. Harsh commands and curt demands are rarely found in the same climate where courtesy and civility are present. In describing courteous behavior, one person said, "just be nice."

- *The two most important words are "Thank you."*

Courtesy includes the use of words such as "please" and "thank you" in your day-to-day conversations and communications with others. The impression that each of us gives to

customers, coworkers, and associates is an important part of our job. First of all, it is certainly more pleasant if your coworkers and your supervisor express courtesies to you and toward each other. Second, we have many customers in the form of students, staff, faculty, and visitors to the campus that expect (and should receive) courteous treatment.

- *The one most important word is "We."*

Together we can accomplish a great deal. Together we can make things happen that are impossible through individual or divided efforts. Teams and teamwork cannot exist without two or more individuals. Team accomplishment knows no boundaries and being part of the team is important.

- *The least important word is "I."*

While individualism is important, the person who doesn't think beyond

his or her individual needs or interests will offer a very limited contribution to their job, their community, or to society for that matter. Tasks are usually accomplished by people and rarely can one person "do it all." If everyone thought only about themselves, there would be only rare instances of cooperation, significant accomplishment, or progress. John Donne suggested that "no man [or woman] is an island" and we cannot function alone and apart from the rest of the world. If each of us heeded the lessons taught by these few lines, the tone of our organization would improve and there would be more cooperation, more teamwork, more loyalty, and more "buy-in" of employees. The rewards can be tremendous whether on or off the job. Try it. It works. 🏠



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**ABOUT THE AUTHOR:** A Registered Professional Engineer and a frequent speaker on the subject of facility management and strategic operational design, Matt Adams is a graduate of the Georgia Institute of Technology. He is President of the Adams Consulting Group in Atlanta, Georgia, and a regular columnist for APPA's *Facilities Manager* magazine.

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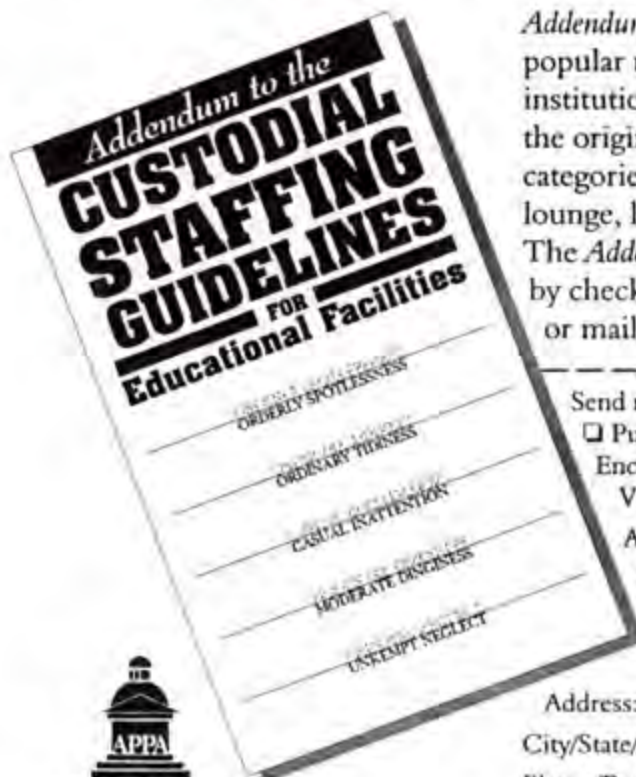
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The Association of  
Higher Education Facilities Officers

# Strategically Planning

## Keeping the Plan Alive

by James O. Cole & Susan D. Cole

**This is** the sixth and final article on strategic planning written specifically for *Facilities Manager* magazine for the benefit of college and university facilities management departments.

The first article addressed the "what" and the "why" of strategic planning. What it is and why it's important that they be done. The focus was on shaping the organization's destiny, rather than leaving the future to chance.

The second article introduced the classic strategic planning model and briefly addressed two additional models. We learned that there are various ways of approaching the primary purpose of planning and how to select an appropriate process.

Article three provided a review of who should be involved and a detailed look at the steps of the classic strategic planning process. It examined the question, "Which is the best approach for facilities management departments within colleges and university settings?"

Article four consisted of an introduction to the tools used during the strategic planning process and addressed the questions, "How does one actually develop mission statements and guiding principles, determine the driving force within the organization, and define relevant assumptions?" and "How are the

strengths, weaknesses, opportunities, and threats developed that impact the organization and lead to the development of objectives and strategies that are the primary product of the planning process?"

In article five we discussed the implementation of a strategic plan. The article illustrated how to take the products of a completed plan and develop them, and discusses the tactical issues involved in executing the plan.

This sixth article will bring closure to the series. We will briefly address how to keep a strategic plan fresh, alive, and well throughout the intended planning time frame. Finally, a quick look will be taken at all of the available planning approaches that might be considered for use.

### Keeping on Track

One of the greatest pitfalls in strategic planning is actually executing the plan over a period of several years and keeping the plan relevant and active during this time. The danger is that, in the urgency of daily battles, the plan takes a back seat. Many organizations have a strategic plan but it winds up on the shelf. It becomes merely a monument to an initial improvement commitment and good intentions, but is not a driving force for the organization.

The mechanisms for avoiding this fate are a combination of regular reexamination of the plan and the establishment of measurement techniques and reinforcement programs.

### Reexamination of the Plan

The old management adage "you get what you measure" is highly relevant to the execution of strategic plans, and measurement is both quantitative and qualitative. Without

disciplined regular attention to the organization's progress on its strategic plan, the daily/weekly/monthly crises and the urgent needs will simply overwhelm the best of intentions and over-shadow the important issues.

Therefore, the first guideline for keeping a plan alive is to have routine scheduled progress review meetings on a monthly or quarterly basis, depending on the activity level and time frame of the plan. Plans with high activity deserve monthly detailed reviews of progress. At the very least, the progress and activity of a plan should be reviewed in a quarterly meeting, during which time those responsible and accountable for various aspects of the plan should report their progress and plans for the next quarter.

In addition to reviews of progress and activity, quarterly meetings should be used to do a brief "course check" to assure the planning team that vital assumptions have not been impacted and that tactics continue to be relevant. Minor course corrections can occur at this time.

On a once-a-year basis, a full day should replace the quarterly meeting for a more in-depth analysis of the accuracy and continued relevancy of the plan. Assumptions, objectives, and strategies should be reviewed. Appropriate course adjustments may be required. Progress that is well behind plan deserves corrective action.

### Measurement and Consequences

In order to know how progress is proceeding against the plan, it is important that quantitative as well as qualitative measures be available for each objective, strategy, and tactic. As stressed in article five, the team must

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be able to answer the question, "How will we know when we get there?"

There are a variety of measurement options available. The primary and most effective ones are classic project management—like Gantt or time-line charts and the Performance Matrix. Time-line charts are useful for tracking actual activity against planned activity when a quantitative measure of results is not possible. Where outcomes and results can be actually measured against set goals, the Performance Matrix is the most powerful approach.

Behaviors and results are best shaped through the management of consequences. Unfortunately, the term "consequences" is most often associated with punishment and most people tend to think of consequences as negative. However, the most powerful way of driving ever increasing performance is through those consequences that are considered to be *Positive Reinforcement*. By giving people something they value, such as attention, recognition, and appreciation, they are motivated to perform. Therefore, when activity and results are on, above, or beyond plan, there should be a celebration in appreciation for those involved and for the team as a whole.

Conversely, when progress on tactics, strategies, or objectives are below expected levels, corrective action is required. Those who are not performing deserve appropriate feedback and greater support with their efforts.

#### **Other Planning Models**

Three of the possible planning models have been addressed in these articles. The classic model is the one that tends to be most effective for an organization, such as facilities management departments, that are encompassed within a parent organization. Additionally, the classic model serves organizations that need to focus on desirable internal changes like improvements in productivity,

quality, customer service processes, systems, etc., rather than on markets and product lines. This approach recognizes that the customer's needs are best met through improving internal capabilities.

The other two models, addressed in the second article, are the Theory of Business perspective, developed by Dr. Peter Drucker, and the "fit and alignment" thinking postulated by Dr. Michael Porter. These two models tend to emphasize strategic positioning relative to the market and the broader environment, and thus are more appropriately applied to profit-making organizations or those in a highly competitive arena.

There are a few other approaches, of a strategic nature, that one might consider depending on the circumstances of the organization.

#### **Scenario Planning**

This concept is described in Peter Schwartz's book, *The Art of the Long View*. Scenario planning is most appropriate in circumstances where the planning horizon is very long—ten years or more. The essence of scenario planning is that it develops possible "scenarios" or visions of the future, and thus allows the organization to identify what it could or should be doing now to best prepare for the possible future environments. It also focuses on those specific conditions that are likely to happen because they occur in more than one scenario.

A consortium of people from within the organization and from vendors/customers associated with APPA spent a weekend earlier in 1997 applying this approach to higher education in order to get a glimpse of what might be expected of the facilities management departments and their functions in the future. The result addresses possible future roles and adjustments required by the leadership of facilities organizations.

#### **Reinventing the Market**

This theory of planning was popularized by Hamel and Prahalad in their text *Competing for the Future*. In this approach, it is suggested that incremental changes in the products/services/approaches to an industry will no longer be sufficiently effective. It suggests that substantial paradigm shifts regarding the current industry must occur. Effectively, an organization "reinvents" the industry by offering products/services/approaches that become new industry standards within a few years. A highly visible example is CNN, which reinvented the televised news industry.

#### **Value Migration**

This method is presented in the work done by Benson Shapiro, Adrian Slywotzky, and Richard Tedlow of Harvard Business School and various consulting firms. The essence of "value migration" is to recognize early what customers value and how an organization's offerings relate to where the value is moving or "migrating." Obviously, one wishes to be "skating to where the puck will be" when it comes to responding to value migration.

This approach is most relevant for mature organizations when customers have multiple alternatives and choices in relatively stable markets.

#### **Closure**

Strategic planning is a challenging and complex process that requires time and commitment. Nonetheless, the process delivers proven results. Many organizations want to do strategic planning but don't know the best way to go about it or the right approach for them. Therefore, we want to close with this clear message:

*It is better to start, and to add value and quality over time, than to wait to begin until one has the "absolutely right" process and direction.*

Just the performance of a strategic planning activity, as long as it spans more than two years, will benefit the organization with an increase in clari-



ty of direction, purpose, and visibility of the process. Even if the direction is not perfect the first time or the implementation has some failures and mistakes, it is far better to get started and begin decreasing the learning curve, than to wait for the right time, right process, and right answer. The strategic plan should be revisited and revised periodically in response to changing conditions. This is informal-

ly referred to as a "rolling plan" as opposed to a static one. In addition, a qualified and experienced strategic planning facilitator is invaluable in keeping the strategic planning effort on track and in providing objectivity.

We have enjoyed creating and presenting these articles. We hope they have been of value to you. Please do not hesitate to contact us with any questions you may have. 🏢

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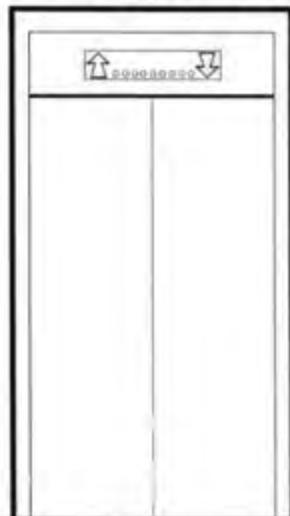
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# Challenges and Accomplishments: A Profile of Pete van der Have



by Alan L. Dessoff

**W**hen Pieter J. van der Have started working at the University of Utah 35 years ago as a general helper in carpentry, higher education facilities management was virtually unrecognizable from what it is today.

"It was very in-focused. We just took care of brick and mortar and we weren't really sensitive to our customers," says van der Have.

Now, as he assumes leadership of APPA and looks ahead, van der Have can see how far the industry has come—and where he thinks it has to go.

"There has been a radical change over the last 30 years, particularly over the last five or ten," he says. "Our whole orientation has changed. We're no longer just maintaining fan motors. We're supporting multi-million-dollar research activities.

"And that, in turn, has an impact on what we do and how we do it. We're much more sophisticated business people and more sensitive to the way we do business. I think we have a mandate to be better leaders rather than just managers of people and tools. We have had to become leaders within our institutions."

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*Alan Dessoff is a freelance writer and editor based in Bethesda, Maryland. He wrote the profile of President Ron Flinn in 1996.*

Leadership in changing times underscores what van der Have sees as his mission as APPA's President. He hopes to chart a course for the association through a challenging period for the higher education facilities management industry.

"It's in a state of transition, just like higher education itself, especially institutions that are publicly-funded," declares van der Have. "We have to reorient ourselves and reidentify who our real stakeholders are."

At the University of Utah, as at many other state schools, the state's contribution to the institution's budget is decreasing, he explains. "It's almost a misnomer to call us a state institution because such a small piece of the pie comes from the state. The universities are redirecting themselves toward a different group of stakeholders. I think that extends to the facilities business as well." Van der Have believes that trend will continue for some time as the federal government downsizes and cuts back its funding for various programs, and private industry also "is more careful about how it supports research grants." Last year, for the first time in 20 years, his university did not realize an increase in research monies. "In fact, we were down a little bit," van der Have says.

For facilities managers, that means "we have to rethink the way we do business," van der Have states. "More of us are looking at creative ways of financing projects. We're relying on third-party financing, since we can't depend on the state as we used to. We're borrowing against future energy purchases. That's become a creative way of doing business."

To demonstrate the contemporary role of facilities managers in this new business-oriented environment, van der Have cites a feasibility study the University of Utah is conducting now to determine whether to build a second central high temperature hot water and chiller plant on its campus. If building the plant is justified, "Our university's financial people will identify a team of key players, including potential bidders or contractors, to get it financed," says van der Have.

\*\*\*

Making better use of limited resources is a message that van der Have hopes to emphasize at APPA as well. That's what he means when he talks of "extending an open hand." He explains: "I want to aggressively seek partnerships with



other associations and organizations, public and private, so that we can help each other develop products together that we all can use. That way, no organization will have to invent the wheel by itself."

As an example, van der Have cites the five-year alliance agreed to last summer by APPA and the Construction Specifications Institute. It is designed to provide enhanced services to the members of both organizations and also advance the technology and quality of building construction and management in North America.

The "open hand" is symbolic, van der Have says. "It means you're reaching out to give something to somebody, or you're accepting something, or you are about to shake hands."

Indeed, this philosophy of working together is what APPA is all about, according to van der Have. The many services and products offered by the association integrate tightly into its vision statement, "Global Partner in Learning."

Staffing guidelines, high-quality multi-faceted educational programs, benchmarking surveys and self-evaluation tools, numerous publications, deferred maintenance studies, facilities inventory programs, specialized seminars and presentations—they all have had to rely on partnerships of various kinds in order to reach the level of maturity of which they can boast today, van der Have says.

"Because of the high level of sophistication in the facilities business at the volunteer association level," he continues, "we also have to reach out and work with others. We cannot afford to go it alone and expect to be successful. The balancing act is to develop symbiotic, non-parasitic partnerships in which both sides can benefit from the relationship without either side having to sacrifice its identity of autonomy. All sides have to feel good about the partnership or it will not be sustainable."

A number of hot topics are facing APPA today, according to van der Have. For instance, he says, the deregulation of electrical power sales will require the responsible facilities officer to develop a full understanding of this new marketplace.

"APPA has to be there to provide educational materials and programs to help us develop that understanding. Supply side management is critical," says van der Have.

On the other end of this spectrum, organizations such as the U.S. Department of Energy are working aggressively with APPA to help the association achieve a higher level of energy and utilities management, van der Have says. "APPA

and its leadership have to provide the opportunity and the method for this kind of knowledge transfer to occur," he states.

"An additional challenge for us is to remember that APPA is an international association," van der Have says. "Not only do we have many active members in Canada, but we also have a large contingent in the Australasian region. The products and services APPA provides generally have to retain integrity as they are transmitted across borders and oceans."

There is a large group of facilities professionals out there "with whom we have yet to partner on a continuous basis," van der Have says. "Our friends in the public education sector have approached us with increasing frequency, looking for opportunities to work with us in order to improve the knowledge base for all groups." A task force has been established to study the feasibility of this potential relationship and recommend how to make it happen, van der Have says.



Except for two years teaching French and English (even though he was a math major) in a local school district following his graduation in 1967, van der Have has been at the University of Utah continuously since 1962.

He recalls his early years working part-time as an undergraduate. "I started out as a grunt," he says. "I was proud of just getting the carpenter shop clean."

Moving up the ladder in progressively more responsible positions, he was named director of plant operations, his current position, in 1991. Now, he manages more than 600 employees and a budget of more than \$25 million, including utilities, on a 1500-acre campus that includes a research park, a hospital, and other health science facilities. In addition, \$400 million to \$500 million of construction projects "are somewhere between an idea and actual construction," he says.

Van der Have sees one of his most significant achievements at Utah as "continuing to get our department

involved in the development of new projects from inception through construction."

Not too many years ago, he explains, the state constructed buildings on the campus with no involvement by the university's facilities maintenance managers. "When a building was finished, they gave us the keys," says van der Have.





"Now, all the members of my team are invited to participate in programming, design, and construction. We're building a new \$50 million stadium now and we've been involved since day one."

The result, van der Have continues, is that "we believe the university gets a better product—a more maintainable product that is more consistent with the fabric of our campus." Also, "our people feel more ownership of it as well."

Van der Have several years ago received an additional 11-month assignment as interim director for facilities and engineering in the University Hospital. He currently meets regularly with deans and other stakeholders around the campus and in Salt Lake City "to gain and maintain an outside perspective of how we are doing."

He serves on Salt Lake City's Public Utilities Advisory Commission and also meets regularly with city planners and other key university staff members to coordinate long-range planning activities. He served nine years, including seven as Chair, on the Board of Directors of the University of Utah Credit Union.

Van der Have credits much of the expanded role of his department to his long-time boss and mentor, V. Randall Turpin, assistant vice president for administrative services at the university. Turpin previously held van der Have's position for 12 years. "He started the ball rolling," says van der Have.

Turpin, in turn, thinks van der Have is the right man for the job now—and for APPA as well. "I really believe Pete has the right skills for the times we're in," says Turpin. "We're expected to do more with less and Pete does that. He's very intelligent and has excellent communication skills. He's very approachable, he has good relationships with everyone, and he gets things done."

"He has a dedication to the institution," adds Arnold Combe, assistant vice president for financial and accounting services at the university. "He develops a sense of ownership in it. It becomes personal with him."



Van der Have assumes the APPA Presidency under unusual and tragic circumstances following last July's death of President-Elect Tom Vacha. But van der Have is well schooled in the association. An APPA member since 1976, he has served on many committees. As a Board member, he sat on the Executive and Planning Committees and participated in the association's strategic planning effort.

As Vice President for Information Services, he led the development and establishment of APPANet, oversaw revisions in the Comparative Costs and Staffing Survey, and chaired the Strategic Assessment Model (benchmarking) consortium. He served on two Facilities Management Evaluation Program teams, one as team leader. Van der Have

was also instrumental in assisting the APPA office to computerize in the early 1980s.

A past president of RMAPP, van der Have has written articles for a number of industry publications, including *Facilities Manager*. He received APPA's Meritorious Service Award in 1993 and the President's Award in 1996.

His work with APPA and RMAPP (now RMA) "has been most significant in advancing the work of all of us who have for years labored over facilities management issues," says Jack Hug, assistant vice chancellor over auxiliaries and plant services at the University of San Diego and a past APPA President. "I have always been able to count on Pete for assistance and have never found him to be too busy to offer a helping hand," Hug continues. "When there is a need, you can count on Pete to step forward, just as he did in accepting the APPA Presidency. Once again, he has filled a gap that needed to be filled for the benefit of our association."

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For someone born in a harbor town—Rotterdam, in the Netherlands—"living in the middle of the desert still is a shock sometimes," says van der Have. His parents decided to move to the United States when he was 12 and settled in Utah because that's where their sponsor, also Dutch, happened to live.

Van der Have says he considered moving elsewhere from time to time—he once received an attractive offer to teach in a community just north of San Francisco—but decided to remain in Utah and today, at 53, is happy that he did. "Even though I prefer being near harbors and water, I like living in Salt Lake City. It's a very clean community," he says.

His wife, Vickie, is an executive with the Utah League of Credit Unions. Their three children are in school. Van der Have says he enjoys playing golf but admits to a "terrible" handicap of about 20. "But I'm out there enjoying nature," he says. He used to fish but sold his boat last year because he didn't have enough time to use it. Now, he rides his bicycle 10 to 15 miles a day. The exercise helps him recover from knee surgery he underwent last March.

Van der Have says he loves snow "as long as I don't have to shovel it or drive in it." No skiing, either. But he likes college football and operates the scoreboard for University of Utah home games.



Van der Have's location and position have served to provide an additional responsibility for him. He is involved in planning the Winter Olympics that will be held in Salt Lake City in 2002. The University of Utah will host the opening and closing ceremonies in its new stadium—"that's one of the reasons we're building it," van der Have says. Also in design is a \$100 million residential complex that the Salt Lake City Olympic Organizing Committee will rent to house 4000 Olympic athletes. Construction will start in the spring of 1998.

Van der Have went to the Summer Olympics last year in Atlanta to observe "how things ran" and returned four weeks later to see if there was any long-term impact on the Georgia Tech campus. He will be traveling to the 1998 Winter Olympics in Japan as well.



As he looks back, van der Have marvels at how advances in technology have changed his industry—and the skills required in the people who work in it.

"Thirty years ago, it seemed as if all you needed were a pair of pliers, a screwdriver, a roll of baling wire, and duct tape and you were in business," he says. "Today, with digital technologies, etc., you need people with high-tech training."



Finding them can be difficult, he says, because "we have to compete with the private sector, the downtown community. We're after the same kinds of highly-trained individuals."

Retention is a significant issue, van der Have says, because skilled workers "can make more downtown; we often can't compete in that sense." But universities can compete, he suggests, by offering a worthwhile benefits package. "That's generally still in pretty good shape, although it's starting to deteriorate in some areas," van der Have says.

Meanwhile, speaking of digital advances, van der Have is concerned about something else: what will happen to the campus in the Year 2000? It's part of the digital adjustment problem facing many large computer systems everywhere.

"Elevators in our buildings could shut down, or refrigeration equipment, or intensive care equipment in the hospital. This is a very significant issue in our business," asserts van der Have.

His department is inventorying "areas where this could be a problem," he says. "We're identifying all elevators that have digital controls. We have a campus-wide energy management system that is monitored at a central plant and we have tons of chips all over the campus. We have to identify those locations, then go through systematically and replace or reprogram them."

Then there's the matter of finding the money to fund the work. "If we can fund it as we go along, fine; otherwise, we'll have to beat the bushes at the state level to get special funding," van der Have says.

It's one more challenge for a man who has a reputation for getting things done. "It keeps me going," says Pete van der Have. ■





# REDESIGNING THE INSTITUTE

## *to Meet Our Profession's Needs*

by Gary L. Reynolds

I have had the good fortune of being involved with the Institute for Facilities Management Institute for approximately the past ten years—as an attendee, as a faculty member, and as chair of the Institute's steering subcommittee. The Institute has been an outstanding success with record attendance at both the January and August/September sessions. The three-week program has been meeting our members' needs and, with the special programs, has been able to adapt to current issues and concerns. However, the three-week format has been in place since 1985 and, although some curriculum changes have occurred, it is still substantially of the same form and content as it was in 1985. In the summer of 1995 my thoughts about the Institute and how it was serving APPA's members began to crystallize. The upcoming Institute session was in place and the special program was ready to go. The excitement was there, but somehow I felt that the Institute was

getting outdated and "shop worn." These were not just arbitrary thoughts but were based on input and feedback the subcommittee had been getting from attendees, Institute faculty, a curriculum review (completed under the leadership of Don Briselden), APPA staff concerns, and finally, input from many of the excellent facilities leaders in our organization.

What were these concerns? The classes were getting too big, with some classes over 100 attendees. Some of the material was outdated and no longer relevant, while important topics were not getting adequate coverage. The special programs were only offered every 2½ years, limiting availability. The large school/small school format no longer seemed as relevant as we talked about core competencies regardless of school size. And finally, the quality of our presentations was not keeping up with the expectations of our attendees as elsewhere multimedia presentations were becoming more and more common. In short, over the past five years, it had become clear that many changes in the facilities management profession, and in our expectations for continuing education, were having an impact on the Institute.

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*Gary Reynolds is director of facilities services at The Colorado College, Colorado Springs, Colorado. He is APPA's Vice President for Educational Programs.*

At the August 1995 Institute I broached the first thoughts of suggestions for changes to the Institute subcommittee for a new Institute design that would address these issues of quality, relevancy, flexibility, and availability. After the initial shock wore off, the discussion turned to the various aspects of the proposal, and the excitement mounted as the new design was seen as a dynamic and innovative way to address so many concerns.

As a result, a complete format and curriculum review was undertaken. The review started with a weekend retreat in May 1996 in Alexandria, which was generously sponsored by Cutler-Hammer and Stanley Consultants, Inc. The result of this review was a proposed new format that would be four weeks long, rather than the current three weeks, and would include entirely new courses in four competency areas of administration, operations and maintenance, energy and utilities, and planning, design, and construction. These four core competency areas correspond exactly to the newly published third edition of APPA's *Facilities Management: A Manual for Plant Administration*. In addition, the Institute subcommittee looked at ways to provide access to the courses in a more flexible and personalized way. The redesign was substantially complete by December 1996, with final details worked on over this past year. The new Institute will be offered for the first time this January 1998 in Houston, Texas.

The new co-chairs who are guiding the transition to the new Institute are Emily Wren from Indiana University/Purdue University at Indianapolis (IUPUI) and Jim Roberts from Campbell University. They are being assisted by four "deans" who are overseeing the development and implementation of each of the four sections of the Institute: *Administration*, Don Briselden of Phillips Exeter Academy, *Operations and Maintenance*, Jay Klingel of the University of Virginia, *Energy and Utilities*, Mo Qayoumi of the University of Missouri/Rolla, and *Planning, Design, and Construction*, Don Guckert of the University of Missouri/Columbia.

The new Institute will offer courses in all four competency areas simultaneously each time the Institute is offered in January and September. Core topics for each of the four competency areas will be taught during the mornings of the Institute, providing 20 hours of professional development on those topics (five mornings at four hours each). A student who intends to graduate from the Institute will be required to attend the Institute four times and take all 80 hours of instruction on the core topics in the four competency areas.

However, the afternoon sessions are set up entirely differently. Since the Institute provides a break on Wednesday afternoons and ends at Friday noon, there are three afternoons available with five hours each afternoon for an

additional 12 hours of instruction. But rather than prescribe what courses an attendee should take, the design allows an attendee to select from an array of electives. For example, in the two-hour block from 1:00 p.m. to 3:00 p.m. on Monday, electives will be offered from each of the competency areas and an attendee can choose one in their own area of expertise or in an area of other interests. A student who intends to graduate from the Institute will be required to attend the Institute four times and take 48 hours of electives. If a person chooses to concentrate on a competency area by taking 24 hours or more of electives in any one competency area, then the graduating certificate will note that as an area of emphasis.

The easiest way to understand this would be to work through an example. Let's assume that I am attending for the second time and would like to attend, as my first preference, the administrative track. However, I am an engineer and have an interest in utilities and planning, design, and construction. On the example form (shown in Figure 1) you can see that I've put a 1 in the administrative check box indicating my preference to attend the administrative track. Since APPA will need to balance class sizes, they have also asked me to indicate my order of preference for the other tracks. I've put an "X" in the planning, design, and construction track check box since that's what I attended the first time, a 2 in the utilities track check box, and a 3 in the operations and maintenance check box. This completes the first part of the sign-up process.

Next I need to sign up for the electives I would like to take. I need to decide upon six electives—two each for Monday, Tuesday, and Thursday afternoon. Since I am interested in planning, design, and construction, I want to sign up for classes in that topic area. Figure 2 shows an excerpt from the electives information showing the courses offered during each two-hour block. I see that in the first two-hour block on Monday from 1:00 p.m. to 3:00 p.m. I have a choice from four electives: Materials Management, Fire and Life Safety, Deregulation of Electricity, and Building and Renovation Costs. Since I am interested in planning, design, and construction issues, I am going to sign up for the Building and Renovation Cost elective. Once again, however, if the class of my first choice is full I've indicated my second choice as Deregulation of Electricity, my third choice as Fire and Life Safety, and my fourth choice as Materials Management. Since I've not taken any of these before, I have not marked an "X" in any of the choices. I now need to repeat this process for the remaining five elective periods.

When APPA receives my application they will process it on a first-come first-served basis and make every effort to give me my first choices.



If I had already attended one or two tracks of the old Institute, I would be able to graduate under the old system. I would indicate on the form that I've attended in the past and then register normally. If I had already attended one or two tracks I would have covered most of the material in the new administrative competency area, so I would sign up for one of the other competency areas. APPA will make every attempt to accommodate those trying to graduate under the old system.

Well, that's about it. APPA is excited about the Institute redesign as it is truly a refreshing and entirely new program. The topics are highly relevant, and excellent speakers—all experts on their subjects—have been identified and are preparing for January. The new Institute for Facilities Management is ready to serve APPA members and other facilities managers for many years to come. I hope to see you in Houston! 🏢

**Figure 1**

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50a.m.	Please number in order of preference the following core areas. If your first choice is full, you will be placed according to availability.  <input checked="" type="checkbox"/> General Administration & Management <input checked="" type="checkbox"/> Operations & Maintenance <input checked="" type="checkbox"/> Energy & Utilities <input checked="" type="checkbox"/> Planning, Design, & Construction				
9:00-9:50a.m.					
10:00-10:50a.m.					
11:00-11:50a.m.					
12:00-1:00p.m.	LUNCH		FREE AFTERNOON	LUNCH	INSTITUTE ADJOURNS
Elective courses: Please provide two alternate choices		Elective courses			
1:00-2:50p.m.	1st 2nd 3rd	1st 2nd 3rd		1st 2nd 3rd	
3:00-4:50p.m.	1st 2nd 3rd	1st 2nd 3rd		1st 2nd 3rd	

**Figure 2**

Elective courses: Please provide two alternate choices			FREE AFTERNOON	Elective courses	INSTITUTE ADJOURNS
1:00-2:50p.m.	1st 115 A 2nd 214 A 3rd 233 A	1st 214 A 2nd 246 A 3rd 231 A		1st 424 A 2nd 433 A 3rd 442 A	
3:00-4:50p.m.	1st 214 B 2nd 330 B 3rd 330 B	1st 311 B 2nd 313 B 3rd 330 B		1st 424 B 2nd 433 B 3rd 442 B	

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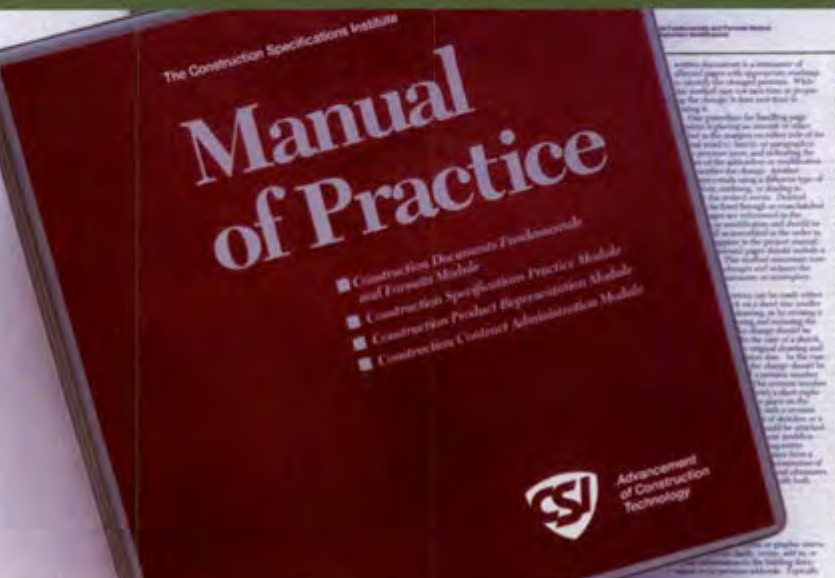
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by Roger Dow

# Insights from a Customer Enthusiast

**W**hen Ron Flinn asked me to speak to you today, I asked him what can I possibly share with all your colleagues and friends. He said, "Well, at Michigan State we like to take risks. Why don't you talk about taking risks?" Now, I love a guy who walks his talk. What better way to show what it is to take a risk than to invite a guy from Marriott to speak at a conference held at the Sheraton? Thanks, Ron!

We at Marriott do a tremendous amount of business with APPA and with many of APPA's member institutions. Actually there are a lot of similarities between what all of you do and what we do. Regarding facilities, we run some 1,300 hotels around the country. We do food service in many of the universities and colleges you're with, and we do, in fact, partner with you in some other services that you

might have. We're both in a people business, so what it's really about is people and facilities.

We're also in a situation, just like you, where the people who sign our paychecks are telling us every day they want it done cheaper, but yet our costs seem to be going up. Everyone seems to want it better, faster, cheaper, when I want it, where I want it, how I want it—and free would be very nice, too. We hear this all the time.

Another challenge can occur when things are going well and you think you've got it all made, then all of a sudden the rug gets pulled out from under you. Let me give you an example of that. I'm going to take you back six or seven years ago. I was getting my hair cut with my young boy, who was six or seven years old at the time, and he was talking to a woman customer. He's speaking very loudly because she has a hair dryer on. I can't see him but I can hear him, and he says, "What's that Marriott on your keychain?" The lady says, "Oh, I'm staying at the Marriott Suites." He says, "I always stay in suites; I think suites are a good idea. They have a man who cooks waffles for you right in the restaurant. You'll love it; make sure you have a waffle." She says, "Young man, you know a lot about Marriott." He says, "I ought to, my father over there works for Marriott, always has." She says, "So what's going on these days at Marriott?"

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*Roger Dow is vice president and general sales manager for Marriott Lodging, Bethesda, Maryland. Starting at Marriott's sixth hotel as a lifeguard, he has worked for Marriott for 25 years. Dow is the coauthor of **Turned On: Eight Vital Insights to Energize Your People, Customers, and Profits**. This article is taken from his keynote address at APPA's 1997 Educational Conference and 84th Annual Meeting, held last July in Orlando, Florida.*



My son says, "Oh, my dad's real worried. They're going broke, they're running out of money, he's not sure they're going to make it." I turn around, hoping he's not speaking with Donna Marriott; good thing he wasn't.

That was the truth. What had happened is that I didn't realize my son was listening so carefully to a conversation that was going on around our dinner table every night for the previous three weeks. Bill Marriott had called a bunch of us together and said, "I'm not going to lie to you. Every rumor you've heard is true and then some. We're in terrible shape." You see, our debts have soared some \$7 billion. We had been building hotels like crazy. We could make no mistakes. And then all of a sudden in 1989 we woke up and had a whole bunch of hotels under construction, next to a whole bunch of empty office parks and office buildings. Our debt soared and Mr. Marriott said to us, "We met with our finance and personnel people, we figured that we can afford to make payroll until April, maybe May." This conversation was in November or December, so only five months later, 200,000 employees could be in trouble. And he said, "I don't know the answers, but I'm going to count on each one of you. There are two ways of approaching this. One, we can slash costs like crazy and just pull cost out of the business; any fool can do that and then hurt the business two, three, four years down the road. Or, we can find out what things aren't productive, what things aren't adding value, and pull the costs out that are really not adding value and do not take away from the customers. I'm just going to ask for any ideas you have; I'll take them all."

Well, the word went around very quickly. I don't know about your organization, but it's real simple at Marriott. If you want to get the word out real quickly, you start a rumor. The next day 200,000 people knew we were in deep trouble. And all of a sudden cards and letters started coming in. A cashier in one of our restaurants told us that we give her too much cash to make change every day, and she suggested that all the cashiers at our 1,300 hotels and some 3,000 other businesses—40,000 to 50,000 cash registers—turn in some of the extra money they had. Well, we put the word out and two weeks later, \$4 million showed up. True story.

And that's what it's all about. It's about the little things, the little incremental things we do, that we constantly do, to

constantly improve and change the approach we're taking that really make a difference. Not huge, massive changes. Well, I don't know about you, but I know as I look at all our people and people that run our facilities and things like that, it's very simple. The bottom line is that each year you're asked to do more with less. Every year, someone says hey, you're doing a great job, but can you just cut your expenses by 5 percent and still do a little bit more?

When you really think about, there are *three predictors of long-term vitality* and who's really going to be in this long term and be successful. One is *not* customer satisfaction. You know you talk about customer satisfaction, but I think that's trite. It's *customer enthusiasm*. Customer satisfaction only

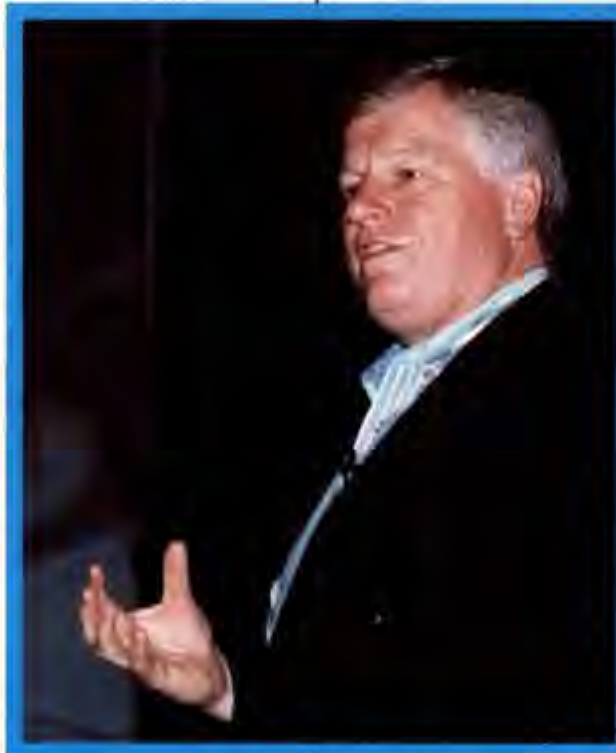
keeps us in the game until someone comes along and says hey, I can do that 2 percent better. And all that customer satisfaction and loyalty goes right out the window. It's *customer enthusiasm*. And the most enthusiastic customers I've ever met, bar none, are Harley Davidson owners. Wouldn't you agree, Harley Davidson customers? I mean, when you can get your customers to tattoo your logo on their body, then you have really got it made! So that's our goal—Marriott tattoos.

The second predictor of long-term vitality is about quality and value—the value we're providing for the services we're giving. Facilities people are in a tough spot because you're in a

situation where it's right there, people can see and feel it, versus all the other things that are going on at the schools that are somewhat intangible. Yours is the value you're adding and the quality you're providing.

And the most important long-term predictor—relationships. And relationships are so critical. The relationships we have with the people that are on your team, the relationships we have with the purchasing department, the administration, the relationships we have with vendors and suppliers and partners of ours, and the relationships we have with everybody that uses our services is what's so important.

I cowrote a book called *Turned On: Eight Vital Insights to Energize Your People, Your Customers, and Your Profits*. Tom Peters wrote the foreword and said it best. He said that you know you can have the greatest product and service in the



*Continued on page 25*



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world, but if your people and your customers aren't turned on, it's over, period. It's just a matter of how long it takes. I want to share with you a few of the insights in the book that I think are most pertinent to what you do every day.

The first of them is so important, and it is *build a strong foundation*. Too many organizations or too many groups that I've seen have built a narrow foundation. And they start this way not ever thinking of where this thing is going to go ten, fifteen, twenty years from now. And that foundation crumbles if they don't have their eyes wide enough open. The greatest example I've ever seen of that is *Sports Illustrated*, who said that they were about making the best sports stories and pictures in the world in magazines and delivering them every week. Their blinders were on. They didn't look at the electronic side of the business. ESPN came along and stole the business right away from them. ESPN makes \$500 million a year, and *Sports Illustrated* is nothing compared to that.

You may have heard of an insurance company called USAA. USAA is a Texas-based, \$40 billion a year company that insures military officers, retired military officers, their families, and their dependents. That's their defined base. USAA has a 94 percent market share. Ninety-four percent of the people who can be insured by USAA are insured by USAA. And they never spend a nickel in advertising.

The two retired Air Force generals who run the company told me that they're always courting their customers and don't take them for granted once they get their business. They're excited about working with their customers, and the customers are excited about USAA. I asked one of their customers what it's like being insured by USAA, and she said, "I feel like I'm dealing with the insurance man next door." Forty billion dollar organization, yet so personal.

When our troops were returning from the Gulf War, USAA got a list of those who were insured by USAA. They sent every one of them a letter that said, and I'm paraphrasing, "We're so proud of what you've done for our country, and we're so thrilled that you returned home. Attached is a refund check for your premium for the entire time you were in the Gulf, because we figure you probably weren't driving your car too much while you were over there. Thank you." Does anyone have a chance of stealing their business? No way. And that's what it's all about—having relationships.

Here's a short example of the need to collaborate on solutions. A traveler was holding up the line at the Delta Airlines counter in Chicago, screaming at the woman at the counter. His bags had been misplaced or rerouted. His face is all red, he's yelling at her, he's calling her an idiot, he's saying he's never going to fly Delta Airlines as long as he lives, he's going to tell every person he knows, and when the word gets out (because people do listen to him), no one will fly their airline, and they're going to go bankrupt. And all of a sudden she stopped his tirade and said, "Sir, you're getting

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# on campus.





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all excited. Do you understand that there are only two people in the world who care if you ever get your bags back? And one of us is losing interest real fast." He quickly realized that they were in this together, and that feeling certainly applies to all of us who work in educational facilities.

One of our big convention hotels, the San Antonio River Center, consistently ranks among our highest customer satisfaction in the company year-in and year-out. Now, you're not supposed to have great service in these big facilities because it's tough work, and they're so huge. But the people in San Antonio didn't know that, and they were in the highest customer satisfaction of all of Marriott. Why? At Marriott, like a lot of places recently, we worked for about a year on our mission statement. We had all these people working on it, and we had to get it on one page. That was important—get it on one page, the fewer words the better. And like anything that comes out of any corporate office, we sent our one-page mission statement to all of our hotels with seven pages of attachments. And when it arrived in San Antonio, the folks there ripped off the seven pages of attachments, threw them in the garbage, read what was left, pulled out one phrase, and threw the rest in the garbage. They run their entire hotel by one phrase: "Every guest leaves satisfied." Period. That's it. It doesn't take too long when

someone comes on board to understand what their whole mission is about. It doesn't matter if you're in the engineering department, at the front desk, if you're the general manager, the cook, or the housekeeper—every guest leaves satisfied, period.

World-class is being brilliant at the basics. We can get as fancy as we can want, we can get all the technology and all the capabilities, but we've got to be brilliant at the basics. It is jobs that are done on time. If we say we're going to do something, then it's got to happen. People show up and are on time. We follow up. That's just a part of being brilliant at the basics.

The next insight is to make every customer feel special. The challenge we have is determining what is most important to our customers. To truly build the customer focused organization, we must truly listen and understand what's going on and what people really need and want—not what we think they want. I recommend that you get a fabulous children's book called *The Phantom Tollbooth*, by Norton Juster. It was written in the 1950s and has been reprinted many times. It's about young children being led through life by other children, and they learn the lessons of life from a child's perspective. One boy, named Milo, is being led around by an older boy named Alec Bings. And Alec Bings brings him to a place and says, Milo, we're in the most important place in the entire world, do you know where we are? We're in a

place they call the point of view. Let me explain it to you. What do you see? Milo says, I see a bucket of water, Alec says, ah, you see a bucket of water. But if you were an ant you would see a vast ocean. If you were an elephant it would merely be a cool drink. If you were a fish, of course, it would be your home. See, Milo, the way you look at things, there are different perspectives and points of view. If you can understand everyone's point of view and bring them together to one common point of view, that's how you succeed. That's what I think our job is all about.

Now let's get this in perspective. What is it we're trying to do? What are we really trying to accomplish here? Let's be sure we all agree and we all understand this is what we're trying to accomplish. I think we're getting to a point of flexibility in personalization becoming more important. Levi Strauss, the jeans maker, now have what they call personal-fit jeans for women. And what you do is women go into the Levi

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## O'Brien Kreitzberg receives top grades for work on academic campuses



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Strauss store, they take your measurements, you pick the fabric you want, and three weeks later they deliver a pair of jeans perfectly tailored to fit you. Levi Strauss' stated goal by the year 2000 [by the way, I'm thrilled there's a year 2000 coming or nothing would happen in business; I don't know what we're going to do after 2000], is to have personal fit jeans for every man and woman in the world in 72 hours. When they do that, they're setting us, unfortunately, back to zero. Because you're going to say to your customers, we'll get that answer for you in two weeks. They'll say, what do you mean two weeks? I can get jeans, personally-fit, delivered to my home in 72 hours. What do you mean two weeks, how about today? And that's the challenge. Everything is going faster and expectations are higher.

The next insight is to *have the courage to set bold goals*. I'm not saying ridiculous goals, but I'm saying bold goals. And say okay, this is where we want to be, and you get your team of people you're working with, and you get your suppliers and vendors, and ask what would be some bold goals that we could really do next year. Have no more than three bold things you're going to try and accomplish that will truly make a difference during the next year. Measure them and let everyone see them every day. And everyone is moving along in the same direction.

Next insight I want to go to is *simplify, simplify, simplify*. Every one of our lives are too complex. How do we make things simpler and easier? How do we become incredibly convenient? We used to approach sales at Marriott very simply. First, you've got your loyal customers, you know who they are that you deal with. And then you've got new customers, you know someone new comes on board and you've got to worry about them. And we're trying to always fill the bucket. We thought our job was to worry about the new customers, some didn't worry about the loyal customers—that's why they call them loyal. Then one day we found out they weren't as loyal as we thought. Those loyal customers all of a sudden started leaving us. They started leaking out the bottom of the bucket, so we had to go faster and faster trying to fill the bucket at the top. We finally said, "This is insanity." It costs five times more to take care of one of those new customers than it does to take care of one of those loyal customers. So we're redoubling our effort with the loyal customer so they don't go elsewhere. We don't want them going elsewhere, so we end up spending more time with the loyal customers, maintaining, and keeping and building relationships. Because you have loyal customers, you know, they take care of themselves and they understand your service delivery, they know who to call direct, they're much easier to



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take care of. You want to simplify things and become incredibly convenient.

The next insight is to *unleash the power of people*. You can't be everywhere at once, so you need to rely on your team even more. How do we unleash the power of people? First, we make sure we get the right people on board. We want the people who are going to be correcting the problems as they go and fix things; that's what so critical. How do we find those people? How do we use different strengths of different people on our team, and how do we bring out those strengths and really make one plus one equal three? Don't hire people who aren't with you on this—they cannot be on your team, period. They'll do more in two months to tear down what's taken you years to build up. Go without until you find the attitude in the heart, not just the head of the person to do the job.

Which brings me to my final insight. And that is to *lead with care*. It's all about leadership, and leadership is not that hard. It's really about having some bold goals, giving people the tools to get there, everyone working together as a team, and building relationships and renewing attitude. It's also about another word that I never see talked about in any of the business books, and that's optimism. Everything that ever happens has an optimistic leader running the show at their organization or their department.

We want our schools and universities to say, "Hey, this group really cares about us. They're really on board and everybody's moving in the same direction with the same common goals." That's what it's all about. 🏢

[Ed. Note: *Turned On*, by Rog E. Dow and Susan Cook, is available from APPA for a limited time. For more information, go to the APPANet Bookstore <[www.appa.org/publish/pubindex.htm](http://www.appa.org/publish/pubindex.htm)> or call 703-684-1446 ext. 235.]

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# Risk Management: A Leader's Responsibility

**A**s facilities management professionals and leaders, we have a very important responsibility to do everything possible to ensure and promote the safety of the employees and students working for us. Risk management enables leaders at all levels to do exactly what the term implies, manage risk. Safety risk management is a specific type of risk management.

Risk assessment is a part of risk management and can range from simple to complex. It can be done formally or informally. A risk assessment requires all leaders to identify hazards and place them in perspective relative to the work or task at hand. Logically, one cannot identify the risk without first determining what the hazards are.

The leader's responsibility can be summed up in six specific tasks.

**1. Detect Hazards and Associated Risks.** Determine the risks associated with the work, task, or operation. Risk identification involves a close look at each phase of the work, project or operation. What are considered risky tasks, what tasks are not risky?

**2. Assess the Risks.** Determine risk implications. Two questions must be answered. What is the likelihood of a mishap? What degree of injury or equipment damage is possible? A low likelihood of mishap and high probability of minor injury equals a low risk. A low likelihood of mishap with a high probability of a fatal injury equals a high risk. Good understanding of the facts is the foundation of good risk decisions.

**3. Develop Risk Control Alternatives and Make Risk Decisions.** If risk elimination is not possible, then risk must be controlled without sacrificing essential work requirements. Some risk control alternatives are in the form of new or revised task standards, operational pro-



by Roger E. Rowe

cedures and parameters, training requirements, maintenance standards, etc. Decisions take several forms, such as 1) selecting form among available controls, 2) trading off task elements against risk controls or vice versa, and 3) making a final decision whether controls are adequate to make risk acceptable considering task benefits.

**4. Implement the Risk Control Measure.** The procedures for controlling risk must

be integrated in plans, SOPs, preliminary training, and through channels that ensure the procedures will be effectively used during the actual work or operation. Implementation involves the entire chain of leadership as a team ensuring that the full range of approved operational risk controls are in place and read to go.

**5. Supervise the Operation.** The leader uses the same supervision techniques (e.g., on-the-scene, spot-checks, performance indicators) to monitor risk controls that he uses to monitor overall work or operations.

**6. Evaluate the Results.** Assess operational results to include effectiveness or risk management controls.

Three basic rules underling the application of risk management, regardless of level of leadership.

- **No Unnecessary Risk Should Ever Be Accepted.** The leader who has the authority to accept a risk has the responsibility to protect his or her employees from unnecessary risk. An unnecessary risk is risk that could be reduced or eliminated and still accomplish the necessary work or operation.

- **Risk Decisions Must Be Made at the Appropriate Level in the Organization.** The decision to accept or reject a risk must be made at the level consistent with the implications of the risk. The leader who will be held directly accountable for the decision should make the decision.

- **Risk is Acceptable if Risk Benefits Outweigh Risk Cost.** Leaders must understand risks and be prepared to take risks to accomplish their work. At the same time they must understand the difference between a risk and a gamble.

*Roger Rowe is associate vice president for facilities at Miami University, Oxford, Ohio. Miami is a 1996 winner of the Award for Excellence in Facilities Management, APPA's highest institutional honor.*



As a guideline, assessment of human error can be outlined as follows.

#### DIRECT/MANAGER

Prevent by:

1. Integrate safety into all phases of work or operations, especially "high risk" type.
2. Making provisions for sudden weather changes.
3. Reviewing SOPs to ensure "safety" is properly addressed.
4. Ensuring that employees at all levels perform their work without taking unnecessary risks.
5. Knowing your own limitations and those of your employees.

Prevent by:

1. Training employees how to properly accomplish their job duties.
2. Training and properly documenting operators of special equipment.
3. Conducting refresher training to include safety awareness.

#### LEADER RESPONSIBILITY

Prevent by:


1. Recognizing and stopping unsafe acts.

2. Knowing employees' abilities and provide help to those needing it.
3. Knowing and executing contingency plans at the appropriate time.
4. Maintaining staff interaction.
5. Ensuring prompt and proper notification is initiated in the event of an accident, injury, or near miss.

#### INDIVIDUAL RESPONSIBILITY

Prevent by:

1. Following established procedures, including SOPs and operating requirements.
2. Understanding that accidents can and do happen.
3. Observing speed limits, road and weather conditions or limitations while operating a vehicle.
4. Knowing your limitations and skills.
5. Having confidence in yourself, your supervisors/leaders and your equipment.
6. Maintaining composure during stressful periods.

Although risk management is fairly easy to understand, some training is required to properly implement a good risk management process within a department. There is nothing more important than providing a safe work environment for all employees and students working in a facilities operation. Our active participation and involvement is critical to the success of a good safety risk management process. 

#### RISK ASSESSMENT WORKSHEET Job \_\_\_\_\_

PLANNING			
Circle One	RISK VALUE		Score
Guidance	Preparatory Time Adequate (Day notice)		
Written notice	3	4	5
Verbal briefing	2	3	4
Job meeting	1	2	3

EMPLOYEE EXPERIENCE			
Circle One	RISK VALUE		Score
Task	Task Level Familiarity	Qualified (Skilled)	
Complex	3	4	5
Routine	2	3	4
Simple	1	2	3

ENVIRONMENTAL CONDITION/HAZARDS			
Circle One	RISK VALUE		Score
Environmental Conditions	Safety Hazards		
Voltage >100 volts	5		20
Exposed Asbestos	5		20
Lead Based Paint	5		20
Recognized Hazard	5		20

WORK SITE LOCATION			
Circle One	RISK VALUE		Score
Surface/Conditions	Surface Condition	2' - 6' off Ground	
Exterior/unstable surface/slope	3	4	5
Exterior stable/level surface	2	3	4
Inside Building	1	2	3

WEATHER CONDITIONS			
Circle One	RISK VALUE		Score
Temperature * F	Visibility/Moisture		
<32° or >90°	3	4	5
32° - 59°	2	3	4
60° - 79°	1	2	3

0 to 10 Low Risk	11 to 23 Caution
---------------------	---------------------

\* High risk work activities assigned a value of 24 or HIGHER require coordination, before executing, with the Division Director. When two or more tasks are assigned a risk factor of 5, or above, the overall rating is HIGH RISK.

#### Risk Management - Leader's Responsibilities

- Detect Hazards and Associated Risks
- Assess the Risks
- Develop Risk Control Alternatives and Make Risk Decisions
- Implement the Risk Control Measures
- Supervise the Operation
- Evaluate the Results

#### Big "3" Risk Rules

- No unnecessary Risk Should ever be Accepted
- Risk Decisions Must be Made at the Appropriate Level
- Risk may be Acceptable if the Risk Benefits > Risk Costs

#### Safety After Action Review

- Description of Incident/Activity "What went Wrong?"
- What Could Have Prevented the Problem?
- How to prevent the Problem in the Future, "Changes?"
- Actions Taken?

#### Major Reasons For Human Error

STANDARDS ARE NOT CLEAR OR PRACTICAL OR DO NOT EXIST	DEPARTMENT RESPONSIBILITY
STANDARDS EXIST BUT ARE NOT KNOWN OR WAYS TO ACHIEVE THEM ARE NOT KNOWN	TRAINING REQUIRED
STANDARDS ARE KNOWN BUT NOT ENFORCED	SUPERVISOR RESPONSIBILITY
STANDARDS ARE KNOWN BUT NOT FOLLOWED	INDIVIDUAL RESPONSIBILITY



# Automated Water Chemistry Control at University of Virginia Pools

by Dan Krone

Maintaining clear, safe pool water at all times was a priority for architects and designers of the new University of Virginia Aquatic and Fitness Center. At the university's old aquatic center, this was a labor intensive and expensive task. However, at the new facility, an automated pool water chemistry control system has provided the precise level of control demanded, with minimal effort from pool engineers. In comparison with the university's former aquatic system, the new system uses the same amount of chemicals although the amount of water and bather loads are more than double.

The aquatic and fitness center opened in early June 1996. The 107,000 square-foot facility includes a multi-level fitness center and three pools. The main pool is an eight-lane, 50 meter pool. A warm water pool and a whirlpool are also available for recreation and relaxation. The main pool, warm water pool, and whirlpool hold 721,000, 46,000, and 7,000 gallons of water, respectively.

## **Imprecise Water Chemistry Control at Former Facility**

The new facility replaces one built in 1972 which housed a smaller pool and a diving well, altogether about 330,000 gallons. Engineers at these pools found maintaining proper water chemistry very labor intensive and imprecise.

A metering pump fed sodium hypochlorite to both the pool and diving well. A pool engineer took wet tests twice a day for chlorine residual and pH and used this information

*Dan Krone is aquatic director for intramural/recreational sports at the University of Virginia, Charlottesville, Virginia.*



**The 50 meter, eight-lane main pool holds 721,000 gallons of water.**



to manually adjust the pump to control disinfectant feed. In addition, operators would periodically add muriatic acid to adjust pH. The results of the wet test were posted periodically in accordance with

state regulations. Additionally, Virginia state regulations require staff to wear goggles, face masks and gloves when handling these substances, which was time consuming and annoying for pool engineers.

Shortly after the university's 1972 facility opened, swimmers noticed a strong chlorine odor. Operators determined that this was due the presence of chloramines, or combined chlorine (which contributes little to disinfection), in the pool water. Chloramines can cause a variety of undesired effects, including chlorine odors, swimmer eye burn, and water cloudiness. Pool engineers were successful in new techniques to treat these problems. However, chlorine control was still somewhat erratic. State regulations require 1.0 to 3.0 ppm free chlorine residual at all times, but chlorine residual levels could not be continually monitored manually. Also, fluctuations in disinfectant levels demanded that the pool be shocked approximately once a week to safeguard complete disinfection and destruction of chloramines.

State law also requires pH values to remain between 7.2 to 7.8 at all times; but for the same reasons precise manual chlorine control could be difficult, pH control could also be unpredictable. The combined effect of inaccurate chlorine and pH control at the old pool sometimes produced cloudy water and occasional chlorine odors. Improper pH control also led to the potential for equipment scaling.

*continued on page 39*



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continued from page 37



*The controller's high resolution redox (HRR) technology directly and continuously measures the rate of oxidative disinfection, which can be affected by pH, temperature, or organic load.*

#### Cutting Edge Chemistry Control

University planners decided that any new aquatic facility should have chlorine and ozone feed controlled by an automated water chemistry control system. It was determined that although this type of system would require a larger initial investment, it would provide long-term savings on maintenance, chemicals, and labor. It would also provide for the swimmers' safety and satisfaction.

Ozone contributes to effective disinfection, and it is considered a particularly powerful pool and spa water oxidizer. In addition, ozone is a chloramine scavenger which reduces the detrimental effects of combined chlorine and the need for chlorine shocks. However, the state requires that ozone feed be augmented with chlorine because ozone leaves no residual in the water.

A water chemistry system was designed that utilizes an ozonator to generate ozone and three pool and spa controllers to automatically moderate chlorine feed to each pool. The controllers' high resolution redox (HRR) technology directly and continuously measures the rate of oxidative disinfection, which can be affected by pH, temperature, or organic load.

On each of the pools, ozone is injected at a constant, low level into the pool's return line downstream of the filter and heater. The ozone is treated in contact chambers to maximize the efficiency of the ozone in the pool. A separate line with a booster pump pulls water for chlorination from after the filters and reinjects it upstream of the ozone.

A sample flow from this sidestream is fed to a flow cell, where two probes read pH and redox levels. The controllers compare this HRR signal to the setpoints established by the pool operators. When the probe reads an HRR below the setpoint, additional chlorine is released

into the filtered water. Thus, chlorine residual levels are accurately measured and controlled at all times. On the main pool, for example, the HRR controller setpoint is 750 mV, so that free chlorine is maintained at an effective and state-compliant level regardless of the effects of pH, temperature, or chloramines.

Programmable alarms notify operators if chlorine or pH levels drop below or rise above certain levels. This can provide operators with almost immediate notification in the event of an emergency or equipment failure.

Pool engineers calibrate the HRR controller to achieve a setpoint value which corresponds to the chlorine residual range required by state regulations. When the chlorine concentration in the pool drops below the user-defined setpoint, the controllers send a signal to the chlorinators. These chlorinators feed briquettes, which are a 68 percent available chlorine calcium hypochlorite product containing an anti-scaling additive.

#### Ensuring Crystal Clear Pool Water

The new system has helped ensure clear pool water at all times with less labor and a significant chemical savings compared to the university's old facility.

Although the pools at the new facility contain over twice the amount of water and bather loads are two to three times greater, the new pools use almost the same amount of chlorine as the former facility. Several factors contribute to the efficiency

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of automated water chemistry control, including the addition of ozone, the ability to hold residual at a steady level, the elimination of wasteful overfeed, and a well-designed filtration system. According to the pool operators, the chlorinator uses approximately 100 pounds of briquettes every two weeks.

The new facility is also safer and less labor intensive for pool engineers. Since pH feed is controlled automatically, no time is spent handling carbon dioxide. The number of wet tests has been reduced to just one per day, and the test results are posted in accordance with legal requirements.

Heavy pool usage has provided an excellent test for the new equipment. The university sponsored several summer camps for children, including a youth day camp and a competitive swimming camp. A recent regional swim meet included approximately 1500 competitors. Chlorine ppm and pH were automatically held constant throughout these events.

Both pool technicians and swimmers have noticed the exceptional clarity of the water. At all times, a swimmer with goggles can see through the entire length of the 50 meter pool. This is in contrast to the pool at the old facility, where oftentimes swimmers could not see even 25 meters. Water clarity and elimination of chlorine tastes and odors has been at least partially responsible for the tremendous increase in the number of swimmers at the new building. Members of the university's swim team, who can spend up to four hours per day in the pool, have commented on the clear, clean water conditions.

#### Software Provides Interactive Control

University operators are currently considering installing new Windows-based software that will provide an even higher level of control. This program will allow for remote water chemistry control by linking the disinfection and pH control system with the department's PC.

With this software, operators will be able to manage all three pools from a central office. It will automatically record all pool water data at all times, and this information can be retrieved at any time and presented in a graphic or tabular form. In addition, it will provide instant notification of alarm conditions, allowing pool engineers to respond instantly. 📞

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by Matthew C. Adams, P.E.

**Control of** the purse strings is a consideration of all facilities management. It seems that plant managers are continually presented with the task of justifying and requesting increases in maintenance and renewal budgets. This activity is not a subtle gesture. At most institutions, the success of a facilities management department in soliciting funds is one of the most important indicators of that department's performance. Politics, posturing, and personalities always abound. Many times, the budget officers fail to give credibility to the plant management. It is unfortunate that some senior managers require outsiders or emergencies to convince them of why college facilities require continual stewardship and capital renewal. However, not every department within the college is so slow to respond. In researching several colleges and the auxiliary enterprises within them, I discovered something very refreshing and encouraging. When given the opportunity, the student stakeholders of our institutions are receptive, proactive, and long-sighted in their approach to facility asset management.

In the early nineties, the Oregon State System of Higher Education was

***Matt Adams is president of The Adams Consulting Group, a management/engineering consulting firm located in Atlanta, Georgia, specializing in the facility maintenance and management within higher education, school districts, and other institutions. He can be reached at mc.adams@facinet.com.***



headlong into the process of "pitching" to the state's legislature the merits of facility stewardship. The "pitching" itself ultimately became more of an effort than the auditing, projecting, modeling, and budgeting of the state college's capital renewal budget. Nevertheless, fueled by political juice and serendipitous timing, the Oregon State System of Higher Education, (and Oregon State University in particular), succeeded in securing an increasing capital renewal budget during years of overall state budget decline. While all of this posturing and maneuvering was taking place, the director of the Memorial Student Union at Oregon State, Dr. Bill Edwards, and then the assistant director Michael Henthorne, recognized a commonality with the physical plant and started to plan.

In 1992, Dr. Edwards commissioned an audit of the histori-

cal Memorial Student Union facility. I have seen this building and its lush Oregon landscape myself. While old, built in 1929, the facility provides a proud centerpiece for the campus. For years, the state actually required the auxiliary enterprises to set aside .5 percent of the replacement value of the building each year for renewal. Obviously, this was not enough. Walking into the building back in 1992, I was struck by the very old finishes, windows, and systems. The building had obviously accumulated deferred maintenance. In fact, the audit identified over \$20 per square foot in backlogged maintenance.

In the Oregon State System of Higher Education, like many other states, the budgeting process of auxiliary student union buildings and their operations is heavily dependent on the student stakeholders. On Oregon State's campus, the budget process is a three-tiered format. The overall budget last year was \$5.95 million. This revenue is from operations and student fees. Each year the Memorial Union staff work with the student groups to build up and accept the following year's budget. Initially, the budget is discussed and ratified by the Memorial Student Union Board. In underscoring the value of student interest in this process, the Board Student President stated: "The Memorial Union is a building which is the centerpiece for the university and the surrounding community." Once this board ratifies the budget it moves to the Student Fees Board. Since student fees represent 45 percent of the Union's revenue stream, this student board weighs heavily in the budget making process. In addition, a percentage of the student fees



are contributed to a statewide "State Board Co-mingled Student Fee" fund. Finally, the Associated Student Senate or student government is called upon to ratify the budget. Clearly, the students have direct input into the allocation of Memorial Union revenue dollars.

In late 1992 the process of expanding the Memorial Union budget began. From the audit, the staff calculated an eight-year plan to eliminate the backlog of capital maintenance. The catch-up capital was staged in a three-phase spending plan. These funds could never have been accumulated at .5 percent set aside per year. As such, the plan was to make a formal request of the state fund of co-mingled fees. This fund is set up to provide bond retirement and renovation money to a rotating series of the states auxiliaries. OSU was due to benefit from this fund and its administrators approved the eight-year staggered plan for retire deferred maintenance and renovate the Memorial Union and bring it up to modern standards. The capital budget for each was as follows:

Phase I	\$ 2,983,000
Phase II	\$ 3,291,595
Phase III	\$ 1,500,000

In addition, the union staff successfully located other sources of renewal capital for the catch-up efforts. The bookstore co-op anted up \$800,000 in renovations to their space. This in effect was "off balance sheet" financing. The college has always been good at utilizing energy savings dollars. This experience supported the acquisition of \$367,649 in Department of Energy low interest loans. Everything helps, and this plan utilized every source of funds available at the time.

Most are not surprised to see that the students put their support into a financing plan that brought in huge sums of money from outside sources. The union was in bad shape and a state source of funds was secured to modernize it. However, the financing

plan did not just include outside catch-up funding. The plan was based on continual reinvestment to maintain the newly modernized union in top form. The students saw that the .5 percent set-aside was not adequate to continually renew the facility. With the help of Mike Henthorne, the students evaluated and justified a permanent set-aside of 3 percent of the buildings replacement value. This is particularly far-sighted and responsible considering that most of the students who voted for it would graduate before seeing any actual benefits from the accumulated fund. Nevertheless, the set-aside was approved and Henthorne and the physical plant department have the opportunity to plan major capital upgrades over time as needed.

I find it interesting that students place real value in the buildings that they use each day. Jim Grimm, the director of housing at the University of Florida, sees this and incorporates it into the planning process. Every year the students are given a questionnaire to provide input into every aspect of the resident life experience. Among 70 to 80 percent of the respondents, facilities issues are prevalent. The housing department makes every effort to incorporate this input into their capital renewal planning efforts. In fact, the students are allowed to provide input into the resident life budgeting process.

It is encouraging to see that the students can recognize and support responsible facility stewardship on our college campuses. Illustrated by the increasing acceptance of student infrastructure or technology fees, the true cost of operating a physical campus is more widely recognized. Moreover, the responsibility to guard and reinvest in campus physical assets is not just borne by the plant managers. Obviously, the true stakeholders are willing to share in that duty as well. 



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**CUSTOM LED SIGNS**



by Howard Millman

Sign on tombstone: "I TOLD YOU I WAS SICK."

*How do you get people to believe what you say?*

*Humor works sometimes.*

*Credibility works all the time.*

This past summer, American University's facility, financial, and information system managers agreed to try once again to develop a comprehensive asset identification, condition, and valuation database. A formidable and yet necessary task. With 42 buildings, 1.6 million square feet, and a healthy respect for many of the pitfalls awaiting them, the group started with far more questions than answers.

"We need to make facilities management as predictable as possible. By surveying the asset, assessing its condition, estimating a replacement cost and date, and documenting the necessary PM tasks associated with each asset, we have begun to control the controllable," said Scott Byers, director of administration and finance.

With full support—some might call it pressure—from the highest levels of administrators, American University (AU) embarked on an ambitious plan to investigate every room, crawl space,

back alley, parapet roof, machine room, and closet. And do it in three months. Unlike their prior sieges, this time they succeeded.

"We tried several times before to complete this project using in-house resources," said Scott Igoe, manager of information systems. "Because of a combination of time constraints, manpower shortages and a lack of certain kinds of expertise, this time we went outside to find the help we needed."

### Assembling the Team

Knowing that the strength of a structure directly depends on the quality of its foundation, Scott Igoe and Scott Byers retained Data System Services to design the study and quantify the project's data collection goals, including the mechanics of entering the data into AU's TMA maintenance management system. For its first goal, AU declared that they wanted to know the location, description, and condition of every piece of real or portable property they owned.

After a detailed analysis, long meetings, and a modest measure of anguish, Byers, Igoe, Willy Suter (director of AU's physical plant), and the consultants reached a place with more answers than questions. The consultants drafted an RFP detailing the project's mission, scope, and timeline. Facility Engineering Associates (FEA) received the award following a round of competitive bidding.

### Project Design

AU subdivided all the property they wanted classified into three broad categories: equipment (pumps, chillers, etc.); areas (roofs, walls, etc.); and assets (furniture, department-owned items, etc.). After extensive combining

and trimming, the team narrowed it down to 150 subcategories.

To collect the data, FEA fielded three teams of personnel who ultimately inspected 5,800 areas. The makeup of each of team varied by the type of items they inspected but all included some combination of architects, civil, electrical, and mechanical engineers plus technicians. Administrative staff consisted of an onsite project manager and a quality assurance manager.

### Lessons Learned

At the end of September, FEA's teams had completed their investigation, and the hard work in dingy places has long since supplanted the project's initial exuberance and optimism. FEA's project manager, Jim Whittaker, offers some advice to schools considering traveling the same path.

"Define what you want to capture and why. Before you start the data collection process ask yourself what you plan to do with the data. Also, stay flexible and be willing to change the project's scope as circumstances dictate," he says. For example, Whittaker suggests reducing "the amount of time you spend to collect data on a common architectural item, such as a window, by one minute. Multiply that minute by thousands of windows and you have substantially reduce your costs. Do the same on doors, beds, and chairs and you have saved yourself thousands of dollars." AU followed that strategy. In addition to the cost savings, it offers a secondary benefit by reducing the size of the database making it easier to manage and search.

As a scheduling guide, Whittaker said a single eight-person team could perform a condition assessment and inventory in an empty seven-story residential hall in one day. An occupied

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dorm required an additional one-half day. Typically, the team entered and evaluated an empty room in 90 seconds, an occupied room required about 120 seconds. Gaining entry to rooms secured with private locksets and non-mastered keyways rated as the single largest delay factor in all types of buildings.

#### Keeping Track

Barcode labels, generated and automatically linked to the equipment as FEA's technicians keyed the collection data into the TMA database, will enable AU's staff to track and automate subsequent preventive maintenance procedures. All pieces of vital equipment costing more than \$100 (and some items of furniture) will receive barcodes.

FEA's quality assurance inspector, retired Navy commander Skip Sims, praised barcoding as an excellent quality assurance check but cautioned about the need to get the correct label on the right piece of equipment.

"With thousands pieces of equipment to label, often in poorly lighted or inaccessible areas, don't take chances," says Sims. "Develop standardized definitions, even photographs and sketches to properly identify all your assets, such as furniture, to eliminate mislabeling." He also suggests using copies of the original data collection forms as another cross-check on the validity of barcoded items.

When FEA ended the survey, they had identified over 36,000 pieces of equipment, 30,000 assets for a total of 1.1 million data elements. They documented 2,400 items previously unrecorded including 52 transformers, 290 pumps, 218 exterior light poles, 6,793 doors, and 2,980 HVAC room controls. With the field work completed, FEA is developing and linking PM procedures plus schedules for 136 classes of major equipment they identified. No wonder Sims says data entry ranks as the most time consuming part of the project.

AU's Igloe and FEA's Whittaker offer other hard earned insights to those planning to follow in their footsteps. "For portable assets (that have a tendency to move), or are located in a room with many similar elements (such as 12 slightly different electrical panels)," says Whittaker, "Use temporary tags to identify them until they receive their permanent barcodes." And, referencing back to the concept of a sound foundation, both agree that teamwork and first rate communication between the design consultant, facility engineering team, and university is vital.

Igloe, charged with coordinating the project, focuses on the value of communication. "One of the fundamental lessons I learned is the need to communicate with every person involved in the project. We constantly needed to work together, to stay focused, on the project's objectives. It required a rethinking of traditional processes so


we could reach a detailed state of information, not just unconnected data points."

#### Return on Investment

Was the knowledge gained worth the effort? Computing the green money ROI depends on the data's value when it's applied in real world situations. Meanwhile, some of the survey's most critical benefits, such as increased credibility, eludes quantifying.

"We needed more than just a typical formula method when we presented our budget requests. AU's top management wants hard numbers and we intend to supply them," says Igloe.

"What's more," adds Byers, "we can now make a strong case for the necessary funding or at least inform the university about the tradeoff of not providing the necessary funding," notes Byers.

In other words, here's hard evidence; now do you believe us? 

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# The Bookshelf

Book Review Editor: Dr. John M. Casey, P.E.



**The three** books reviewed in this installment of The Bookshelf address three themes which are familiar to all in facilities management positions in higher education. At first these issues may seem to be unrelated, but on further inspection it becomes apparent that they all are responses to the needs of the building occupants. The seemingly disconnected discussions of a proactive workplace performance plan, indoor air quality, and a maintenance handbook are all aimed at providing students, faculty and staff with service. Equally disconnected geographically, but surely related in philosophy and experience, are the books' three reviewers. They show by their insightful comments that the role of a facilities manager is as important in Oswego, New York as it is in Dunedin, New Zealand or Sackville, New Brunswick. 🏰

*John Casey is manager of the engineering department of the physical plant division at the University of Georgia, Athens, Georgia. If you are interested in reviewing a book for The Bookshelf, contact Casey at [jcaseye@uga.cc.uga.edu](mailto:jcaseye@uga.cc.uga.edu).*

**Total Workplace Performance: Rethinking the Office Environment**, by Stan Aronoff and Audrey Kaplan. Ontario, Canada: WDL Publications, 1995, 404 pp, hardcover.

**The** explosive growth of knowledge work as a replacement for the manufacturing economy has changed the focus of the office environment from a support function to the primary site of organizational production. Efforts to maximize the productivity of this form of enterprise must integrate the constructed environment and the human occupants. Refreshingly, the authors decided to present a study of the issues facing today's office buildings, organizations, and facilities managers, rather than a discussion of recent developments in building design as a means of describing the "office of the future."

Starting with a description of the elements of office quality, the authors describe the history and current condition of the office environment and the productivity of office workers. The book suggests that the effect facilities have on office productivity is impossible to measure using conventional methods. To demonstrate this, the authors compare the value of the facility in improving office productivity to the food value of water "no calories, no protein, no fat, no vitamins—yet without water the organism will not survive." To compensate for the lack of direct measures, several indirect building performance measurements are suggested including absenteeism, turnover, task interruption logs, worker attitude, and opinion surveys. These measures forecast the book's "building user" perspective on facilities management.

I found the discussion of building systems to be the weakest portion of the book. Important current practices, such as the use of single membrane roofing systems, are completely left out of the text. While this portion of the book touches on most of the aspects of current building design, a more thorough review of the subject matter and references relating to building systems would be beneficial. True to the premise of a "building user" perspective, the authors commit significant space to the discussion of thermal comfort, air quality, and acoustics. The review of the health risks and worker response to climatic and environmental conditions focuses on an analytical review of the subject, and is successful at convincing the

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reader that there may be more substance to worker complaints than is normally assumed by facilities managers.

Two chapters address the human physical and psychosocial responses to the office setting. These chapters include a review of the effect of the pervasive use of computers in the office. This is again viewed from a user perspective, and centers on the physical and psychological health risks that relate to particular tasks within the built environment. These chapters are very interesting and relate well to the concepts of the facilities management role and responsibility in providing the types and quality of space that are responsive to today's demand for ever increasing workforce productivity.

Assessing customer satisfaction with the office environment, and making the adjustments necessary to improve building performance, is the subject of the final chapters of the book. The authors recommend that this starts with a post-occupancy review to initially measure building performance. This activity and the periodic reviews that follow are described as a diagnostic cycle intended to search out and correct design, construction, and maintenance conditions, as well as user practices, that result in an unsatisfied occupant. The diagnostic cycle proposed consists of becoming aware of conditions, developing objectives, collecting data, developing recommendations, and taking corrective actions. Several strategies and techniques of measurement are discussed, along with the physical and organizational variables that affect the value of the information. Aspects of facilities management and the changing nature of the role of facilities managers are also discussed, and the book briefly describes the popular options that are available to the organization.

Overall, the book provides a unique, analytical perspective on some of the major environmental and

worker productivity issues that are becoming more central to facilities management. The authors describe how these issues can become pervasive and emotional thereby preventing the success of the organization in achieving its mission. The scope is quite expansive and, as a result, many discussions are too brief to give a full appreciation of the true complexity. Heavily referenced, the book can provide a basis for a thorough review of

the subject. *Total Workplace Performance* would be a valued addition to any facilities management library.

This book is available from APPA for \$54. For more information, call 703-684-1446 ext. 235.

Jerry J. DeSantis, P.E.  
Assistant Vice President for  
Facilities Management  
Oswego State University  
Oswego, New York

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**Improving Indoor Air Quality Through Design, Operation and Maintenance**, by Milton Meckler, PE, Lilburn, Georgia: The Fairmont Press, Inc., 1996. 272 pp, hardcover.

A subtitle for this book could be "Fighting the Sick Building Syndrome," but clearly the author has frowned upon such frivolous marketing and has preferred to produce a reference book to be taken seriously. Meckler has gathered together 11 other contributors and with them presents 14 chapters on the air quality of typical buildings. The result is a somewhat academic offering. The quality of the chapters varies greatly, both in style and value, but all are deadly serious, esoteric, and technical. The book is well organized into four sections, and each chapter has clear headings and references. It is a good example of the kind of scientific or technical text book that college kids were raised on 50 years ago. Back room theorists will love it.

However, most of us involved in facilities management are on the look out for useful gems of information. We were attracted by the title (dry as it is), and expected practical tips, but found only a few buried between derivations of equations that would belong better in mathematics texts.

Of fundamental interest to us was the realization that modern ventilation systems are not people-driven. They exist almost entirely to get rid of the vapors from modern materials. These villains are the "volatile organic compounds." Because we need so much outside air to dilute VOCs, we create a new problem of atmospheric dust and contaminants. So we need the art and expense of filtration. We learn then that filtration is not for the building occupants, but to protect plant, paint work, and ducts. So we read about IAQ, SBS, MCS, VOC,

TVOC, ETS, RSP, and not a single mention of BO.

Graphs, diagrams, and illustrations range from poor to average. On the understanding that one good picture is worth a thousand words, the authors have missed opportunities to attract and educate the reader. Even worse, there are mistakes and graphic inconsistencies. There are mixes of imperial and metric systems.

Of use? The warnings about building renovations. Typical complaints about ventilation. Comments on the real worth (or otherwise) of official standards. Testing with trace gases. Absorption agents. Desiccant systems. Variable air bypass filtration. CO2 measurement and energy. Chapter 13, "Proactive IAQ Building Management," is outstanding.

In short, a good book for the reference shelf for those who write about this subject, a useful book for those who teach, but of limited use for most practitioners.

Roger Dodd, Works Registrar  
Rod Markham, Services Engineer  
University of Otago  
Dunedin, New Zealand

...

**Facility Maintenance: The Manager's Practical Guide and Handbook**, by Donn W. Brown. New York, New York: American Management Association, 1996. 313 pp, hardcover.

A restaurant in Los Angeles begins its menu with a promise of "no truffles, no caviar, no bizarre concoctions;" author Donn Brown promises to give the reader "complete, clear, easy to apply guidelines for creating a first-rate maintenance program." Both the restaurant and Donn Brown deliver on their promise. The author does not come forward with any "caviar" or "bizarre concoctions," but in a basic, straightforward and easily understood writing style, he systematically presents a step-by-step



program to enable any facility to have a dramatic improvement in its physical condition, to have a pro-active rather than a re-active maintenance program, and to achieve the end reward of delivering ongoing quality service.

The book consists of six clearly defined chapters, each self contained stand alone units, able to be used for their intended purpose as steps in a process to change. Chapter one describes "First Look at Your Facility" by using powers of observation on simple walking tours of grounds and buildings and critically eyeballing the condition of the facility to get a feel for appearances in the eyes of a first time visitor. The chapter includes many examples of observation tour photos taken by the author, including one of a "goldbrick's nesting area." This chapter also includes a quantity of sample inspection check sheets designed to guide you through that *first look* at your facility.

Chapter two gives the reader some basic tools for a "Second Look: The Evaluation" where the observations taken on the first look are documented on work sheets and a corrective action is proposed, complete with a listing of required resources for implementation.

Chapter three provides tools for the facility manager to "Build the Foundation of Maintenance Management" and prepare for the daunting task ahead—*recovery* and *response*. The author really works hard to provide guidance to strengthen and develop the most important facility management asset—human resources. He writes in clear language on staffing needs, hiring practices and, most importantly, solid training programs complete with goals, resources, schedules, and evaluations. He also documents how to best utilize the human resource asset to deliver quality service, in a scheduled and cost effective manner, touching on even such basic things as maintenance

work order systems, organization charts, work backlog reporting and budget tracking.

When all the information gathering, facility evaluation and foundation building are complete, chapters four and five provide the ways and means to set goals and get on the road to recovery. The author identifies those positions essential to the success of the recovery program and actually

lays out a number of pages of first response check sheets for Personnel Director, Finance Director and Physical Plant Director. The mesh of these positions, in the author's eyes, is essential to the examination of policies, the setting of goals, the creation of special skill teams and for information gathering. Recalling that chapter one of the book was the *first look* at the facility management challenge,



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now chapter six is the last look into the future and the necessity to implement a program of continuous reexamination and to develop your own guidelines and standards. To quote the author, "be the architect of your own Continuous Quality Improvement—Total Quality Management program." As the cornerstone of the author's dialogue on creating your own CQI-TQM program, he uses the fundamentals of quality control of the very famous W. Edwards Deming and the philosophy of what we now know as Deming's Fourteen Points:

1. Create consistency of purpose
2. Adapt the new philosophy
3. Cease dependence on inspection to achieve quality

4. End the practice of awarding business on the basis of price
5. Improve constantly the system of production and service
6. Institute training on the job
7. Institute leadership
8. Drive out fear
9. Break down barriers between departments
10. Eliminate slogans and targets for zero defects
11. Eliminate work standards/management by objective
12. Remove barriers to pride of workmanship
13. Institute a vigorous program of education
14. Take action to accomplish the transformation

In summary, this book is good, basic stuff without the buzz words and catch phrases so prevalent in publications of at least the last decade, carrying a message and a method to both the novice facility manager and the long sitting incumbent—the current state of your physical facility doesn't matter, continual improvement is always expected and forever necessary. This handbook will give you the tools to "reward you with a first class facility and a proactive maintenance program to keep your facility the centerpiece of your corporate image."

**David Greenwood**

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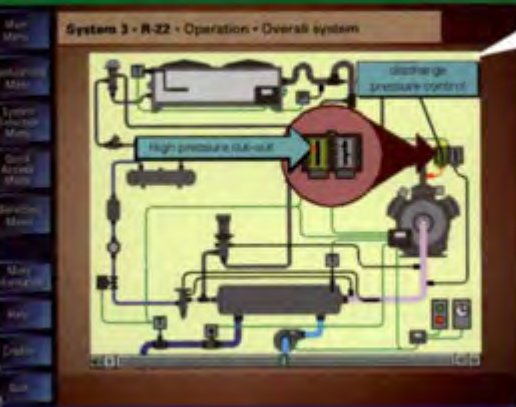
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Jan 25-30, 1998—*Institute for Facilities Management*. Houston, Texas.

Aug 2-4, 1998—*Educational Conference & 85th Annual Meeting*. San Jose, California.

## Other Events

Nov 15-18—*PGMS Annual Conference and Green Industry Expo*. Charlotte, NC. Contact the Professional Grounds Management Society, 800-609-7467.

Nov 16-18—*Conference on Improving America's Schools*. Dallas, TX. Contact IAS Conference Hotline, 1-800-203-5494.

Nov 19-21—*20th World Energy Engineering Congress*. Includes the Plant & Facilities, Environmental Technology, and the OSHA Compliance Expos. Georgia World Congress Center, Atlanta, GA. 770-447-5083.

Dec 8-12—*The Environmental 2000 Institute: Proactive Environmental Stewardship Strategies for Forward-Thinking Organizations*. Contact Katje Swangren at Government Institutes, 3001-921-2345.

Dec 10-11—*Improving Maintenance Planning, Scheduling, and Control*. Las Vegas, NV. Contact UNLV Division of Continuing Education, 702-895-3707.

Dec 12-14—*Basic Roof Consulting Course*. Boston, MA. Contact

Roofing Consultants Institute, 800-828-1902.

Dec 14-16—*Conference on Improving America's Schools*. Washington, DC. Contact IAS Conference Hotline, 1-800-203-5494.

Jan 6-8—*Telecommunications Infrastructure Planning*. Seattle, WA. Contact Kalista Bernardi, Washington State University Conferences, 800-942-4978.

Jan 21-23—*The Effective Operation, Maintenance, and Management of Wastewater Collection Systems*. Las Vegas, NV. Contact the Division of Continuing Education, UNLV, 702-895-3707.

Jan 26-27—*Hot & Humid Indoor Environments Conference*. Tampa, FL. Contact IAQ Publications, 800-394-0115.

Jan 30-Feb. 1—*BSCAI's 1998 Chief Executive Officer Seminar "Visionary Leadership: Managing for Change"*. Cancun, Mexico. Contact BSCAI's Meeting Department, 800-368-3414.

Feb 3-5—*Telecommunications Infrastructure Planning*. Charleston, SC. Contact Kalista Bernardi, Washington State University Conferences, 800-942-4978.

Feb 10-12—*The Effective Operation, Maintenance, and Management of Wastewater Pump Stations*. Las Vegas, NV. Contact the Division of Continuing Education, UNLV, 702-895-3707.

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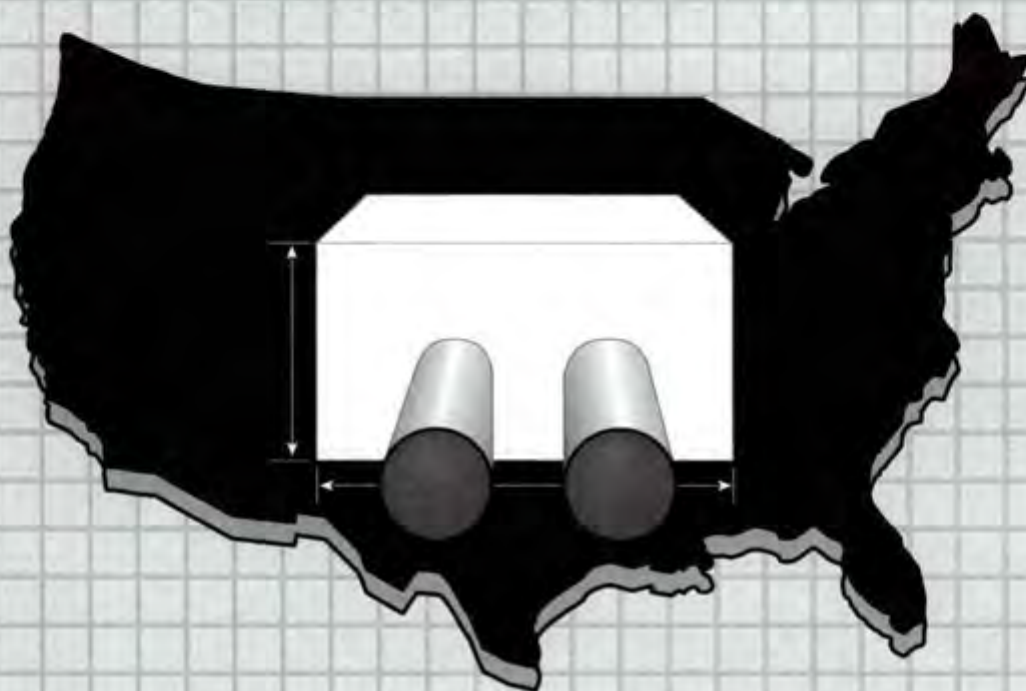
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