“Is that the way you work?”

By the editorial staff of Value World

In an attempt to preserve some of the “Wisdom of the Ages,” Value World is planning a series of interviews with the giants who helped to build Value Analysis. Selected to be first was Roy Fountain, the right-hand-man of Larry Miles and the designer of the Value Analysis Seminar, now institutionalized by SAVE as the “Module I Workshop Training Seminar.”

Interview and comments by Theodore C. Fowler, CVS, FSAVE.

COMMENT: Roy Fountain, CVS, FSAVE, was a pioneer in the development of Value Analysis. I chose him as the subject of this first interview, because I greatly respect his understanding of the how and the why of the process. During the interview he recited an experience from his early years, which I have decided to use as the keynote to this article. It effectively illustrates Roy’s concept of the breadth of application of which Value Analysis is capable - TCF

Roy: Bill Saupe (SOW-pee) was the General Manager of the General Electric Large Steam Turbine Department. He had apparently attended one of my briefings on Value Analysis and, for some reason was impressed with me. Perhaps it was because we were both alumni of Washington State College. At any rate, one day Saupe called Larry and said, “I want Roy Fountain down here right away.” When Saupe spoke, people jumped, so I found myself at the entrance to the Steam Turbine plant. Bill Saupe met me and said, “follow me.” We walked into a large room full of engineers and Saupe simply said, “This is Roy Fountain from Value Services. I want you to listen to what he says and do what he says,” and he walked out, leaving me standing there.

It turned out that these 25 people had been selected by management to come up with a new solution on a safety device which was critical to the operation of large steam turbines. The group manager asked me if I was going to make a presentation. I told him that I had no idea what I was doing there. He explained that Bill Saupe had convened this group to correct a defective device which, if it failed, could trigger enough liability claims to ruin the General Electric Company. “He [Saupe] has told us that we’ve got to fix this and do it now! He has put no limits on us. If we think a metal wall is too thin, double it.” He then asked the key question, “What would you do?”

I told him, “I guess what I’d do, if you’ve got something that doesn’t work, is to scrap it, and then start from scratch and make something that’s better and at lower cost.”

He said, “IS THAT THE WAY YOU WORK?” And I said, “Yes.”

He said, “If that’s the way you work, let’s do it.” And he walked up to the blackboard, he said, “There, dammit, we’ve got something that’s better, and at lower cost.” And I walked home.

The moral: Value Analysis works best under pressure and without constraints. Its power is released when it starts out with the objective of producing a better and lower cost design. And now, back to the interview:

Q: What was the background and history of the Value Analysis Seminar?

Roy: First let me tell you a thing or two about how Larry got started.

THE HISTORY

During the second world war, Larry Miles was with GE’s Purchasing Department in Schenectady. He was assigned to the procurement of critical materiel. He found that vendors would often find it impossible to deliver certain items because of the wartime shortage of some critical material. In such a case, the vendor would ask, “Well, what are you trying to do?” Larry got interested in the potential of this situation. When he would tell the vendor the function he was trying to accomplish, he found that often the vendor would say, “Well, we can provide that function, but we can’t provide it using that material.” This laid the foundation for Larry’s emphasis on function. People don’t buy things. They buy what things do!

At this point, Larry asked a GE Vice President, “Doesn’t anybody care what things cost anymore?” The answer was about what you would expect: “Sure, we care about cost.” Well, Larry then described the function-based system he had developed to control product cost, and shortly afterward he was told to train people to use the system. The first approach was called “in-office-training,” and consisted of bringing one person at a time into his Schenectady Value Services office for three months. He provided some training and assistance in working on a project. He did this for a while, but it was an obviously inefficient process, training only about three people per year, allowing for vacations and holidays.

Art Vinson, the Vice President of Corporate Manufacturing Services, recognized this problem. Art was a very thoughtful kind of person, and he had a strong interest in education. He saw Larry’s problems with the drawn-out training process, and he told Larry that he should be training a thousand people a year. Well, this threw Larry for a loop, but he realized that the three-month approach wasn’t going to work, so he came up with the idea of a seminar.

THE TRAINING FOCUS

I had been through the “in-office training” in Schenectady and had returned to become the Value Analyst in Erie, Pennsylvania at the Locomotive and Car Equipment Department. Larry “took me” back to Schenectady to help him do something about the training situation, and that led to our first try on the seminar approach. It wasn’t
top grade, but we did the best we could. This trial program was 80 hours in length, and we tape recorded each presentation. We then sat down and went through them one-by-one and decided how to improve them. We finally got around to providing the first actual seminar in October, 1952. It was pretty confusing with 59 participants divided into teams of 3 or so, studying about 20 products, all in the same group. Another problem area was that the projects represented a wide variety of GE products. We got through that OK and the second seminar was very much better. We dropped some of the material that wasn’t too productive, and we had great success.

We then tackled the problem that the training process wasn’t really doing much good when it only involved two or three people from a department. The odds were against us. Those people were not having much effect when they returned to their departments, so the next step we took was to put on seminars for only one department at a time. One of the early seminars was in the department I came from in Erie, Pennsylvania -- the Locomotive and Car Equipment Department. That meant we had 50 or 60 people, but they all came from the same department. That really made an impact. The people who were trained could now practice Value Analysis in that department and other people would understand what they were talking about.

TAKING IT INTO THE FIELD
This was particularly helpful at Erie. One of the responsibilities of managers and employees was cost reduction. None of us knew how to do cost reduction. After the Value Analysis seminar we began to focus on function. We would ask, “What does that cost?” and “What does that do?” It quickly became obvious that this was the way to go.

One result of giving some control to the departments was pressure to change the procedure. Phil Spinelli was very creative and was doing a great job as a Value Analyst, and he was told to conduct a seminar for smaller groups in his own department. He started with a 40-hour program, and was very effective, but his boss, the Manufacturing Manager, told him that he should value analyze Value Analysis, and the next step should be to cut the time for the seminar in half. In the first short seminar, the team decided on its own that there was just no way a good job could be done in 20 hours, so they spent the full 40 hours on it, had excellent results, and never told Phil’s boss.

OTHER LESSONS LEARNED
Another area we developed from experience was the selection of project leaders. These leaders would typically guide three to four of the teams through the learning and workshop process. We always selected the best of the previously-trained people -- the ones who really seemed to see the power of the process. Not surprisingly, these people tended to be the “top guys,” and, at least at first, department managers rebelled when their “power people” were pulled away for a Value Analysis seminar. Their opinions changed when their people came back to them with even more energy and creativity. A common comment heard was, “Boy, I learned a lot more being a project leader than I did in the first seminar.” A seminar can’t do everything.

Boeing got the same idea when we led 30 seminars for them. They asked, “What would happen if we used the same leaders for all of the seminars?” One of their truly outstanding people led teams in five seminars and said he learned more every time.

Q: A great many changes have taken place in Value Analysis over the past 50 years, some of them good and some of them bad. Your comments?

ROY E. FOUNTAIN
CVS, Fellow, SAVE, Recipient - Miles Award, 1987-1988
A native of Prosser, Washington, Fountain received a BS in EE from Washington State College in 1944. He joined the General Electric Company but was drafted for a two-year tour to serve in the South Pacific with the Army Engineer Corps on detached service to the Marine Corps.

He returned to GE at the Locomotive and Car Equipment Department in Erie, Pennsylvania, where he spent five years as a Design Engineer. He was temporarily assigned to attend a three-month Value Analysis “in-office training” program with Larry Miles in Schenectady, NY. Shortly after returning to Erie, Larry called him back to Schenectady to develop Value Seminars. During seven years as Manager of Value Training, he conducted many 40-hour and 80-hour seminars, as well as 13 to 16-week Value Task Forces. While the early seminars were usually conducted in Schenectady with three or four people per department, several departments at a time, this was later changed to conducting seminars on location for one department at a time, for 30 to 60 people.

Roy was assigned by Larry to head a new group as Manager of Value Research where he developed a scientific approach to the evaluation of functions. In 1960, Roy left GE to found and preside over Value Programs for Industry, Inc. With an ultimate staff of nine people, they conducted, exclusively, seminars for companies (one company at a time) of two to three weeks duration, and value task forces 13 to 16 weeks long. After seven years, VPI was purchased by Keene Corporation. Roy retired from Keene in 1973 and joined, and later retired from, Environment/One as Manager of Internal Operations. Most recently, he assisted George Fridholm in conducting a number of Value Seminars for individual companies and also one task force on the Bradley Fighting Vehicle. He lives in Scotia, New York with his wife, Maxine.
Roy: I see most of the changes as good, especially expanding into other areas, such as construction, particularly highways and schools.

RESULTS
One recent tendency does concern me. Through all of the early years there was a lot of literature which was big on telling about results. Lately there has been practically nothing that says anything about results. I am in favor of publishing results.

MIXING PROJECTS
One of the problems that I see is the tendency to mix together different types of projects in a Value Analysis seminar. A seminar runs great when it is within one organization, even if many different products are being Value Analyzed by the different teams. What doesn’t work is to mix together very different projects. For instance construction projects, hardware products, and business systems. It’s trying to make one seminar be all things for all people. I don’t think we’ve reached the stage where we can do that yet. I went to one of those seminars, and I was just lost. There were constant questions. Someone would say, “Well, how about using this technique in my kind of business?” While the seminar leader answered this question, the other attendees just sat there like dummies, and said (or at least thought) “I’m not interested in the construction of schools, or highways. I’m interested in medical products, (or something else).

Another reason why I am strongly against mixing: When you stand up in front of a group, you usually use a canned example to explain the steps of the process. That canned example applies only to a particular kind of project and is really understandable to only those who are familiar with that particular area or branch of industry. It “does not compute” with hardware, business systems, construction, et cetera.

My approach: Use a canned project first, then take one of the live projects assigned to the group and go through the techniques again. You will find that the participants will then accept your assurances that the process will work on anything.

Q: FAST Diagramming was developed by Charlie Bytheway in 1963. Did you make much use of it?
Roy: Sporadically. We started out with the classic five function analysis techniques, and I still think that they’re very effective. We added FAST when we had tough situations to analyze or when we conducted task forces, 13 to 16 weeks in duration.

We found that FAST is good; it clears up thinking and leads to breakthroughs, but it ought not to be the only thing that’s taught.

Q: There are some suggestions that some current practices are “giving the profession a bad name.” Do you agree?
Roy: There’s one shift in emphasis that worries me.

EMPHASIZE RESULTS
The only way to approach a Value Analysis seminar is to go after the results. When a Mod I program is taught, there is too little emphasis on getting results. Also a common way of presenting the Mod I is to invite anybody to come, and the participants represent all different companies, I think that’s too confusing.

I’ve been to a session where when a person makes a point it often doesn’t apply to the interests of anyone else. It’s a big mistake to try to mix in all sorts of different people and different companies.

LIVE PROJECTS
Another problem area. I can’t conceive of an effective seminar without live projects. How can you get results without them?

COST ANALYSIS
Another change that degrades the seminar: They have deleted the section on cost analysis. I don’t understand that. Somewhere along the line you have to analyze the costs. We found out that in many cases cost information is inadequate. We had a seminar for the GE Refrigerator Department and asked the Manager of Engineering for the cost data. He said, “Well, that’s going to be a problem. I don’t think we have costs.” When I told him we had to have costs, he promised to dig something up. I got a call from him even before the seminar started. He said, “Once the engineers had the cost, they said, Holy Nell, how can this be, and they started changing things. We made so many improvements we could cancel the seminar and we’d be away ahead of the game... but we’re going to have it anyhow.” So I think the analysis of cost is essential to a successful seminar.

KNOWLEDGEABLE TEAM MEMBERS
Another problem area is knowledge. One of Larry’s original thoughts was, “Put someone on the project who is not familiar with it.” My original project in the “in-office-training” was like that. I didn’t know a darn thing about the project I was assigned to, and it took weeks to bring myself up to speed. I am greatly in favor of putting someone on the project who is very familiar with it... and when they get results, they’re implemented.

Anybody can have success on somebody else’s project. That’s second-guessing and is often a waste of time.

Q: While Value Analysis is still showing moderate growth in its classic environment (Industrial Products, Health Care, Administrative Procedures), there has been an increased interest lately in the use of the process in Government, Construction, and Transportation. In many cases, the process has been significantly modified to fit the special constraints of these areas. Please comment on this.
Roy: I feel that the process should be modified, within reason, to fit the needs of specialized areas.

MODIFY THE PROCESS TO FIT NEEDS
As an example, our firm was approached about analyzing “business systems.” That is procedures, paperwork. My company, Value Programs for Industry, Inc., and my partner, Jack Prendergast, had previously worked only with hardware products. In presenting and leading this seminar we had to modify many things. While changes in the presentations were fairly easy, we found that in order to analyze a procedure, we needed a flow chart, so we educated ourselves in this area, which was new to us, and equipped ourselves with the tools and the plastic templates, and we prepared detailed
costed flow charts.

The principles of Value Analysis were the same, but instead of costing pieces of hardware, we costed steps in the flow-charted process. The results of the seminar were great. I could visualize that if I were involved in, for instance, a construction project, I would have do something different for buildings and something different for highways. Again, the object is to get results.

HOLD TO THE BASICS
Some things must, however, be kept the same. The function approach, for instance. But in teaching the seminar, a whole different set of examples must be used, all tailored to support the teaching of the process. You can't stand up and talk about refrigerators when the participants are working on highways.

Concerns have been expressed about having a different program for highways, another for buildings, another for medical practices. It has been said that this splits SAVE up into little pieces. Well, I'm not trying to split them; I'm trying to get more people involved. And I think you could get more people involved, but it's going to require some work at the top of the Society.
AASHTO Value Engineering Award

“Most Value Added Proposal—During Engineering”

An AASHTO Value Engineering (VE) Award was given to the New Jersey Department of Transportation (NJDOT) at the biennial AASHTO Value Engineering Conference, which was held in Tampa, Florida in July. The award was given for the Value Engineering study that looked at the construction sequencing of two major adjacent projects in Hudson County, across the Hudson River from New York City.

The NJDOT VE Unit completed a VE Study in 2000 of the first of two projects scheduled to be constructed. The first project is Route 1 & 9 Truck/St. Paul’s Avenue consisting of an elevated roadway over an existing railroad line and St. Paul’s Avenue with complex traffic circles at each end. This project includes a new alignment, several structures, and a new interchange tie-in to the Route 7/Wittpen Bridge at the former Charlotte Circle.

Highlights of that analysis included a redesign of the horizontal geometry of the ramps to and from Route 1 & 9 Truck and Route 7 at the Wittpen Bridge. As part of the analysis, the VE unit recognized that the existing Wittpen Bridge, built in 1930, was in need of replacement in the very near future. Preliminary engineering indicated that the future bridge would be on a new horizontal and vertical alignment. A major result of this first study was an interchange design that provided for “flexibility” to tie-in to the current and future bridge.

The second project scheduled to be constructed is the Route 7/Wittpen Bridge over the Hackensack River. That project includes a new higher level vertical lift bridge and interchange connections. An initial VE Study included a Vessel Height Survey over a three-year period taken by the moveable bridge operators. A Benefit/Cost Analysis, in that study, determined the most appropriate, cost-effective height. The existing closed height of 35 feet would be increased to 70 feet and would eliminate 80% of the bridge openings per year. The “flexibility” now inherent in the “St. Paul’s” project, due to VE changes during the first study, provided the ability to tie-in to the now established 70-foot high Route 7/Wittpen Bridge replacement project.

Thus, the VE study brought a lot of critical issues to the table early in the design process. The design consultants for Route 1 & 9 Truck, Hardesty & Hanover, and for Route 7, Jacobs Sverdrup, worked with the department to help establish logical, efficient, and cost-effective design goals and project limits.

Without the VE study, a great deal of bridge and pavement work would have been constructed by one project, just to be removed shortly thereafter by the next.

Upon completion of the Scope Development of the Route 7/Wittpen Bridge and with Initial Designs for the “St. Paul’s” project being submitted for review, a third VE Study provided a Function Analysis of the tie-ins of the two projects during construction and traffic staging. The analysis revealed an opportunity to re-establish the vertical alignment of the “St. Paul’s” project now that preliminary Wittpen Bridge profiles were available.

The function of key elements and issues were analyzed. These included both project’s overlapping construction schedules and staging and the proposed use of temporary ramp tie-ins and roadway and bridge re-work. In addition, the NJDOT’s goal of “continuous improvements” for the elimination of the Charlotte Circle included two traffic signals that are now constructed as an operational and safety improvement.

One of these signalized intersections was initially to be removed after completion of the “St. Paul’s” project, only to be temporarily reconstructed again as part of the “Wittpen” project. Through the VE analysis, this intersection will remain operational throughout the duration of both projects. Also, temporary roadway construction and bridge widening will be eliminated, construction staging improved, construction duration reduced, and road user costs minimized. A savings of over $13 million was also realized.

According to Richard Jaffe, Manager of Value Management at the Department of Transportation, “the VE study brought a lot of critical issues to the table early in the design process. The design consultants for Route 1 & 9 Truck, Hardesty & Hanover, and for Route 7, Jacobs Sverdrup, worked with the department to help establish logical, efficient, and cost-effective design goals and project limits.”

Tom Kondash, a Principal Engineer for the New Jersey Department of Transportation and a member of the Value Engineering team says, “without the VE study, a great deal of bridge and pavement work would have been constructed by one project, just to be removed shortly thereafter by the next. We were able to eliminate construction work and re-work, reduce costs and minimize traffic work zones.”

Adds Jaffe, “This area is heavily congested. We knew traffic control and construction staging had to be considered early in the process. VE studies helped provide an excellent design for each project and in the tie-in of the two.”
Teamwork Delivers New Design Concept

Steve Holmes

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A recent Value Engineering (VE) study has resulted in new design concepts for commercial vehicle inspection facilities. The Ministry of Transportation Ontario has been inspecting commercial vehicles for more than 40 years in a continued effort to keep Ontario’s roads safe.

The new designs are the first in 30 years. MTO utilizes an extensive network of truck inspection stations, ranging from simple widened shoulders (truck lay-bys), to complex stations with buildings, multiple lanes, static and Weigh-In-Motion (WIM) scales, and off-line inspection areas (truck inspection stations).

The ministry’s standards for truck inspection stations were developed in the seventies and eighties to ensure stations efficiently and effectively weigh commercial vehicles. Today, the focus for inspection facilities has shifted to driver and mechanical fitness, in addition to weight enforcement. Driver and mechanical fitness inspection involves parking selected vehicles for detailed inspections.

Current designs emphasize efficient weighing of commercial vehicles, but were not optimized for selecting vehicles for inspection, or the parking of trucks taken out of service. Approximately 25% of inspections result in vehicles being placed out of service. The discrepancy between dated design standards for truck inspection stations and the current inspection procedures created an opportunity for change. The introduction of hybrid concepts such as ‘super lay-bys’ with portable inspection stations on new freeways highlighted the need to balance cost with worth.

A VE study was selected as the ideal tool to build a consensus towards cost effective commercial vehicle inspection facility concepts that would meet current and future business needs, as well as the needs of inspectors and industry.

In September 2002, four divisions within MTO participated in such a study to develop new layouts for Commercial Vehicle Inspection Facilities (CVIFs). The divisions involved were Road User Safety (Carrier Safety and Enforcement Branch and enforcement staff from Field Operations and Central Region), Policy Planning and Standards (VE Services), Operations (Planning and Design), and Corporate Services (Occupational Health and Safety). The VE study was led by National Capital Engineering, Ltd. (NCE). The VE concept developed improves driver and vehicle screening and the deterrence impact of the facility. Building on procedures now being used at some existing facilities, vehicles may be stopped in a pre-inspection area, where enforcement officers may quickly assess vehicle and driver fitness by conducting a preliminary check of the vehicle and interviewing the driver.

The majority of vehicles will be allowed to complete the current trip, while others will be directed to park for a detailed mechanical fitness and driver inspection. Vehicles suspected of being overloaded may be directed to the weigh scales for subsequent weight inspections. In addition, operators and/or drivers are subject to charges under the appropriate vehicle or driver safety legislation.

Two CVIF designs were developed to re-configure the existing stations for preliminary vehicle-screening methods. CVIF 1 is a linear facility for low-volume sites with direct highway access. It will replace current linear designs as facilities are built or reconstructed.

CVIF 2 (see figure A) will replace the current ‘racetrack’ designs (see figure B) typically used on freeways, and is flexible to meet changing demands. Features such as a pre-inspection area,
inspection bays/lanes, overhead canopies for weather protection, a bypass lane, and a static scale situated downstream of the pre-inspection zone, can be added when warranted. A larger CVIF 2 is expected to save about 20% in capital costs from a racetrack design. Existing racetrack-style truck inspection stations can be upgraded to the new concept within the existing property envelopes. The new concept is easier to plow, allows more effective screening of vehicles for detailed inspections, and improves out-of-service truck parking.

In addition to all the challenges of developing new concepts for truck inspection facilities and truck lay-bys, the MTO staff involved in the study seldom have opportunities to collaborate. Enforcement staff participating in the study had no direct experience with design or design concepts, and Highway Engineering staff members were not familiar with the commercial vehicle enforcement process. The Value Engineering process, new to many of the participants, demonstrates the importance of a broad cross-section of employees working together. The evidence is two exceedingly functional and innovative concepts for Commercial Vehicle Inspection Facilities.

"The co-operation and combined efforts of the four divisions involved in the VE study played an important role in developing such an effective design," said Peter Hurst, Director of the Carrier Safety and Enforcement Branch. "We are very pleased with the overall process and final results."

Steve Holmes is Innovations Engineer, Engineering Standards Branch, Ontario Ministry of Transportation, Canada.
The “Value” in Value Management: A Dialog


John Huish is director of campus design and construction at the University of Utah, Salt Lake City, Utah. Pete van der Have is director of plant operations at the University of Utah; he currently serves as APPA’s President.

Recently, Facilities Manager magazine had an opportunity to visit the University of Utah. We took this opportunity to talk to John Huish, director of campus design and construction, and Pete van der Have, director of plant operations, both at the “U.” The focus of the dialogue was on value management. What follows is a representation of the discussion.

FM: What does the term “value management” mean to you?

PV: To me, it represents an involved, an intense process where a group of professionals, of diverse disciplines, work together to design a better facility for a given budget. As a goal to be achieved, the initials VM stand for “value management.” We don’t just go through the process to meet a budget, although sometimes it might be, nor is it purely to improve on the proposed design. To me, and I believe to most of our physical plant staff, it represents a clear opportunity to make a measurable contribution to the design and function of a building over which we’ll have responsibility for 50 years after the designers and the contractors leave.

On “our side of the fence,” we first started participating in these sessions about nine years ago. Rumor had it that they did occur prior to that time they just didn’t invite “those maintenance guys.” In other words, we did not get to play back then. Now, we are a full and equal partner in discussions and the decision making process.

Prior to regularly scheduled value management sessions, our department was charged with scheduling plan reviews on our major capital projects, as was our “parent” agency at the state level, the Division of Facilities Construction and Management, who likewise undertook lengthy reviews of contract documents. (Yes, we are one of the few universities in the country to be “blessed” with a state facilities agency providing oversight on our large projects.)

VM replaces the formal plan reviews, which seemed to take forever. We had to insist that each reviewer keep a list of comments that described the notations made on the review sets. A project manager then had to retrieve these lists and combine them into a lengthy list to go over with the architect. Items with which the architect disagreed had to be taken back to the reviewer for discussion, and so on. You can imagine how involved and time consuming this process was. It took so long that much of the review comments were dropped, obviating their purpose. Criticism continued to flow back to us that review comments were ignored, that the consultant was still free to specify whatever, etc. All this time the wall between Plant Operations and CD&C grew. The process was feeding an already maligned network.

The decision meeting part of a VM session has now replaced the old, cumbersome review process. Now rather than criticize, we reach consensus through a healthy critique of a project, whereby we assert our individual project requirements. And we do this with the VM process. It’s a great vehicle.

FM: From your perspective, what are the benefits of value management?

PV: From the physical plant professional’s perspective, there are numerous benefits. Most obvious is the increased likelihood of acquiring a building that will be reasonably maintainable. Although we may not always get everything we want, anytime one of our recommendations is incorporated into the design, we’re a little bit better off than we would have been otherwise.

Another benefit is that we know well ahead of time what kind of facility we’re getting. We even know it quite intimately before the first shovel of dirt is moved. It then becomes easier to prepare for it so that it doesn’t become an “additional burden.” We know how and when to integrate the new facility into existing processes!

Learning to know the design team working on a project also presents a benefit. Relationships are developed that result in more trust, better cohesion among all the players, and therefore provide opportunity for a more productive exchange of ideas. As facilities professionals, all of us are continually apprised of what works at our institution, and what doesn’t. As a result, our published design standards, (available to designers on-line or by disk) are constantly refined. In a sense we are all training each other!

From the maintenance side, we readily admit that much has been gained from participating in the VM process. It has taught us to appreciate the “big picture.” We have learned to appreciate the dilemma of the design team. This group of individuals has to jockey back and forth between the primary occupants, the state as the official owner, Plant Operations as the primary operator, and the university’s Campus Design & Construction department as our representative during the entire design/construction process. In other words, they often find themselves in a precarious position, doing a constant balancing act.

In these days of shrinking federal and local support, we are increasingly dependent on private donors to fund new construction. These donors feel reassured by this process just to know they are socking their dollars in a sound investment.

JH: What VM means to me is benefit, as in value added. Pete pretty well described that value in his answer. Reduced cost, however, is
Relationships are developed that result in more trust, better cohesion among all the players, and therefore provide opportunity for a more productive exchange of ideas.

certainly not the only benefit to VM. VM was initially established as a measure of surety of costs to a client, but the synergism inherent in the process has brought forth many benefits for an owner or facilities manager.

**FM:** Are there any negative aspects to the value management process?

**PV:** A few of us might say that throwing this many people into a meeting of such length is a waste of time. And during the slower, more tedious times when it appears as if nothing positive is happening, it is sort of like watching baseball. At other times, everyone seems to be “a-movin’ and a-shakin’,” full of anticipation for the home run. A few consider this process a partial or total failure if not all of their suggestions were accepted, even if some were. To those people, spending numerous hours jawboning about issues, that only partially support their priorities may seem useless.

Also, at times, talk around the table may become briefly heated and adversarial. Let’s face it, professional engineers, architects, facilities people, etc., are not always eager to shift positions or change opinions. But frequently even those uncomfortable exchanges often result in something good for the project. This process does not come cheaply. Some say that money is better spent on better components during construction, instead of buying a bunch of overpaid individuals a free lunch. To that, I say “bunk.”

**JH:** Boy, I could really get into some credibility trouble here by throwing around a bunch of buzz words like “paradigm.” But those whom you’ve described, Pete, the negative folks are still stuck in their own paradigms about construction. They come to a conference like this with all that garbage stacked on top of them and get nothing from the session other than a commitment to themselves that, as soon as they get back to the office, they’re going to burn off the mother of all memos to their administration about the time they’ve all just wasted. Yes, this is new territory to some. As a matter of fact, it should be new to everyone of us at every new VM session we attend. We should come with all that “bunk” left back in the correct depository and say to ourselves, “new building, new ideas, new critique, new assertions; let’s go for it and open our minds up to creative, value-centered, cooperative thoughts and ideas.” No, we’re not going to throw out our standards. But we’re not going to wield them either at the sacrifice of real value.

**FM:** What kinds of projects are best suited for value management?

**PV:** You could easily and convincingly argue that the bigger the project, the better the potential for payback. Yet, we hold a modified version of VM for most of our smaller construction and remodeling projects, and even for our significant maintenance projects. We benefit from doing all of them.

**JH:** Again, a sort of “tailoring” results from this process. To predetermine based on project size is missing the point. We have undertaken some great value management on building programs before the onset of design. Especially programs that, because of funding cycles in the legislature, are delayed in processing. Those “aged” programs, which are on the shelf awaiting funding, are absolute candidates for value management because of their needs for reassessment of function, maintenance, and, not the least, budget.

**FM:** What are some of the specific results that evolved out of the VM process? Are they mandatory?

**PV:** There are too many positive results from all the sessions we’ve held thus far on large projects. We simply could not even begin to list them all. At any one session we may end up reviewing a hundred or more recommendations. Perhaps it would be useful to recognize some of the ones that seem to recur most frequently. They address areas such as truss systems, steel vs. concrete decks, size and location of shear walls, roofing systems, chiller sizes, redundancy in, or lack thereof, mechanical systems, cooling towers, building skin, energy efficient/deficient items, fire code compliance, building orientation, service access, location of manholes, utility interface, type of lighting, method of purchase for carpeting, landscaping, constructability, and maintainability, just to name a few. Results or recommendations are not necessarily mandatory. The design team has the theoretical right to accept, modify, further study, or reject suggestions. Realistically, the people paying the bill can insist on implementation of any idea, even over the designers’ protestations. So far, however, this has only rarely ended up controversial or adversarial.

**JH:** We recently canceled a scheduled VM for the schematic design of a $20 million research building. The two-and-a-half-day session was to begin on a Tuesday morning. On the Friday afternoon before, the architect delivered the plans and outline specs with an estimate that was $1.1 million over the budget. We sent it back, canceled the VM, and told him to bring it back on budget and then we’d have the VM session. We weren’t going to waste several days trying to take money out of the project to get it on budget. That’s the architect’s job, not the task of VM participants.

**FM:** Who pays for the VM? What are the costs?

**PV:** On large projects, the project budget has to cover the cost of value management. Direct expense items include the cost for bringing in and housing a professional facilitator, rental of a meeting room, fees for the “cold team” (architects and engineers brought in only to critique the design), and then throw in miscellaneous supplies. We also consider the cost of wages for the in-house people who participate in the process. Even though the project does not directly pay for those costs, they still represent an expense to the institution. We tend to look at that kind of expense as a smart investment in our future.

**JH:** I’m reserving funds in some of my accounts, which are allied to the same purpose, for use in some of the shorter VM sessions we end up having. It’s just too critical to not have some reserves at the institution, even the facilities groups for this purpose. But to di-
rectly answer the question, the owner pays for VM. That sounds scary, doesn’t it? I defer however to the old title block sheets that the Corps of Engineers would give the architectural firm for their work (if you were ever lucky enough to get one of their jobs). In one-inch-high black letters at the top of each sheet outside the ink border was the statement: “VALUE ENGINEERING DOESN’T COST; IT PAYS!”

**FM: Describe the VM process. When does it typically occur and how long does it take?**

**PV:** I can recognize seven phases to the whole process. Giving them labels would cause them to fall out something like this:

1. **Introduction** takes about an hour
2. **Discovery** may take up to three hours
3. **Exploration**
4. **Brainstorming**
5. **Costing Phases C, D, and E** may take 10 to 12 hours
6. **Presentation** takes about one to two hours
7. **Decision making** probably takes three to four hours

Let me elaborate on these phases. **Introduction** allows the facilitator to explain the process, to highlight the objectives, and perhaps to identify key opportunities that he or she has already identified in an initial review of the plans.

**Discovery** allows the design team to present their project. Presentations are made by the individual disciplines such as architectural, civil, structural, mechanical, and electrical.

**Exploration** encourages all the participants to examine in detail the plans, budgets, specifications, etc. **Brainstorming** is where new or not-so-new, radical, and other ideas are identified and listed. People who consider themselves specialists in any discipline gather at that discipline’s work table and offer ideas. This is where ideas go through their first cleansing. Trust me, there is nothing more honest than a peer review by a bunch of people who don’t have a vested interest!

Evaluation is the work done down in the trenches! Once the ideas that survived the initial cleansing have been summarized, they are analyzed for cost impact. Will their implementation cost the project more, less, or are they neutral? Comments are provided, for the record, evaluating the pluses and the minuses of their implementation. This process is completed through joint efforts by key team members, including engineers, architects, professional cost estimators, and O&M professionals.

**Presentation** places the design team back in the midst of the session, and they for the first time become acquainted with the hundred or so ideas prepared by the VMers. Not much discussion takes place at this stage, except to present the ideas and perhaps provide some clarifications. It certainly can be interesting the watch the body language of the design team as they are introduced to some of the ideas!

**Decision making** happens two days later. The design team has had a chance to review and evaluate the many recommendations. Under the guidance of the facilitator, they provide their reaction to each of the ideas. If they accept a suggestion, end of discussion. Or they can offer to study it further, or accept it with some modifications, etc. They can choose to reject a suggestion, which may lead to some serious negotiations if the rest of the participants feel strongly in the other direction. And so on. Once a suggestion has been accepted by everyone in attendance, the user/owner has every right to expect implementation without substantive change.

Looking back at the VM sessions in which we have participated, we could probably claim a 50-50 ratio between accepts and rejects. To me, this means that a helluva lot of suggestions are now in place that otherwise might not even have seen the light of day! This has to have a positive impact on our way of doing business.

**FM: Who do you involve? Who conducts it?**

**PV:** At times, when the nature of the project warrants it, an expert facilitator may be brought in. Other times, an in-house facilitator is designated. This person is usually of a strong engineering or architectural orientation, and he or she makes the whole thing happen. The participants, many in proud possession of professional certifications and the requisite egos, require someone who is a strong leader. An expression regarding how difficult it is to herd cats comes to mind. The working group includes architects and engineers not associated with the project in any other way, and representatives of the owner and the user groups. Representing our university, aside from the user groups, are Plant Operations, Campus Design & Construction, Facilities Planning, and Environmental Health & Safety. It seems that all the stakeholders, both short-term and long-term, are well represented.

**JH:** Between my time away from industry and my advancing mental state, I can’t remember the precise title for the facilitator, but it is something like Certified Value Engineer or CV Manager. The certification is the result of training at specialized institutions for such. But I’d look more for personality than a pile of credentials. Those can be checked out by references. I’d go for the qualifications that you described and the ability to keep the session steered in the right direction. That takes a particular talent, which includes a sense of humor.

**FM: Where do you hold your VM sessions?**

**PV:** We have typically used a large meeting room at an off-campus site. We have also used available sites on the campus, thinking that the closer we are to the campus, the higher degree of participation we might see from some of the folks who can’t otherwise be there. Of course, parking is always an issue.

The location of the space might not be as critical as is its layout. It needs to be small enough so that everyone can hear and participate in the general discussions, yet large enough that the individual disciplines can gather around their own work tables. Lots of natural light seems to enhance creative thinking and positive interaction. A light lunch should be served in a separate space. There should not be any distractions, such as extraneous sounds, from adjoining spaces. The walls should be so that you can tape work sheets up, for everyone to see. And let’s not forget restrooms and phones. They have to be convenient. A phone made available in the room itself has proven to be a useful amenity. We also find that refreshments, provided at the back of the room, offer an opportunity for informal interaction. The watering hole factor.
FM: Is there a scaled-down version of value management for smaller projects?

PV: Yes, there is. Every Monday and Thursday we have a two-hour block of time permanently set aside for that same kind of process but pertaining to smaller remodeling, upgrade, and significant maintenance projects. Users, architects and engineers, O&M people, and anyone else interested can show up to participate in the discussions and decision-making process. Though obviously done on a much lower key, for instance, we don’t bring in a professional facilitator, the concept of the process is fundamentally the same. The benefits have also definitely been the same. These sessions are held right in our own facility.

JH: I have charged my project managers with the responsibilities of facilitating the Monday and Thursday “Project Review” meetings. They handle introductions, challenges to those assembled, and the architect/designers.

FM: Can VM provide guarantees of O&M costs that are within my budget?

PV: Yeah, right! Are you kidding? No way! Now, having said that, I would also admit that if you have a handle on what type and level of facility your budget can support, you’re more likely to be able to approach that, by keeping the design team and the user group under control a little more. We have found that improved maintainability is a frequent benefit from the VM process. For instance, amount and type of glazing often ends up being tweaked in VM, since I know our budget resource for window washing, like none, and how often we do it, like almost never. Another example is the orientation of entry doors. Besides being concerned about the type of doors and quality, we are extremely sensitive to their orientation, since that can have a major impact on our ability to deal with snow and ice problems, and resulting slip-and-falls. Does that guarantee O&M costs within budget? No, but it helps!

JH: There you go, talking O&M. I knew we couldn’t escape it. Let me talk about what my stakes are in light of this question. Only I’m going to rephrase it for my discipline as an architect. (I’ll get down to earth someday, Pete; be patient.) Can VM guarantee me a building that still has some “aesthetics” or “design” characteristics left? Or is what I get an emasculated assembly of maintenance marvels? Now there is PARADIGM ONE for you. To be able to answer that question you have to determine for yourself (or your institution if you don’t have an architecture school attached to it), what good “design” really constitutes. We still have a world full of design professionals who triumph in form over function. “Form follows function” and such ridiculous statements are twentieth century contrivances for personal justifications. I’d prefer to step a little further back to Vitruvius who coined “Firmness, Commodity, and Delight” as the paradigm for good design. You gotta have all three, folks, you just can’t get away from them. I can take care of the “firmness” and “delight.” Pete, you handle the commodity, okay? Commodity covers a big gamut in my book. In order to have it I’ll listen to the guys who have to clean the toilets, you bet. Get them to the next VM, for sure. VM can be a very educational process for all who attend.

FM: Will you realize savings in yearly O&M costs?

PV: I would probably prefer to use the term cost avoidance. As I said in the previous answer, we feel we have been able to control the continental drift between budgets and what we need. The VM process has been one of the tools I’m sure has contributed to our success. Our costs per gross square feet have increased less rapidly than have the CPI, labor rates, etc., while our standards have continually improved. We are confident that better facilities management and creative thoughts are key to this success, and this is what you do in a successful VM. That we have been able to participate in the value engineering process as full and equal partners has definitely been instrumental. This is true even in light of some of the disappointments we might have suffered in individual sessions.

FM: You’ve defined a lengthy process. Can’t we learn from doing this once or twice so that the costs and the time can be saved on future projects?

PV: I don’t believe so. There are too many variables involved that can impact the character of any project. Consider the collective psyche of the user group, the condition of the local construction market, current technologies, code requirements, sources of funding, current campus activity in ongoing construction, priorities of the current administration, moods of surrounding neighbors and other stakeholders, current availability and costs of utilities, general economic conditions, etc. Each and every one of these can affect the personality and makeup of a proposed facility’s programming, development, design, and construction. Therefore, VM is totally justified for every project to help ensure the proper priority and emphasis is given to each of those variables.

Yet, as said before, VMs do become progressively easier. There are repeat performances by architects and engineers. They learn to anticipate what they can expect from us. The same is true from our side, as well. The exploration and the decision-making phases become easier, and more time is constructively spent in the brainstorming phase. And the results just keep getting better and better.

JH: I have to confess, I was worse than a skeptic. There’s no place in this dynamic world for static processes. I thought “static” when I first became involved in VM years ago, as a private practitioner. Wasn’t all my professional training good enough to assure my client that they were getting the best, most beautiful bang for their buck? Why are all these people assembled to pick my work apart? These were some of my feelings then. I would groan when I heard the pronunciation “VE” (now “VM”).

But, the VM process “retrained” me very positively! We all have responsibilities to each other in the world community. And helping each other learn how to do our jobs better is one of them. Value management is a great medium for that kind of professional development. But the synergy is what’s neat. That kind of professional development doesn’t occur at someone else’s cost.
Abstract
Many Value Specialists from around the US have complained in recent years that Value Engineering/Value Analysis is stagnant, or worse that in some sectors the use of value management has dropped off. This paper presents a premise that to “grow” a value management program, measurement of performance of the value program is critical. To counter the arguments that measuring performance is difficult or impossible, a case study from the US Department of State’s Overseas Buildings Operations is presented on how it measures the performance of its VE program.

Value Management Program
WHAT IS IT?
“Value Management! Program” or “Program Value Management” is three main things. It is corporate level leadership for multiple project implementation of value engineering. It provides a cohesive approach to value engineering initiation, integration and continuous improvement. And it is a central source of accountability and quality assurance for the implementation of an organization’s value engineering processes.

In some organizations the VM program incorporates additional value enhancing processes, like Six Sigma, TQM, Choosing by Advantages, etc. This paper focuses on a VM program for value engineering (VE) only. However by changing value engineering to value enhancing processes, measuring VM program performance would be similar.

CRITICAL ELEMENTS OF A VALUE MANAGEMENT (VM) PROGRAM
Nine critical elements of a Value Management (VM) program are:
• Corporate commitment, including adequate program funding and human resources
• Designated VE process champion
• Program visibility and widespread awareness
• Value engineering training programs
• Well-prepared policy and procedural documentation
• Tracking of implementation results
• Periodic reporting of program efforts and quantified benefits
• Recognition, awards, and incentives
• Sharing of successes and lessons learned

While a VM program can exist missing one or two of these elements, without all nine, the program will not be as effective as it could be. Corporate commitment is needed to ensure adequate support of the program. A designated VE process champion is needed to ensure that VE is correctly implemented, and that management considers VE on all projects or processes produced by the organization.

VE will only be used if company personnel are aware of the process and understand how to use it. Hence, program visibility, training, and policies and procedures are essential. Reporting of program efforts is critical to its continued success, in that reporting helps to prove the need for the VE program. In order to report effort effectively, implementation results must be measured and tracked. Along with reporting on the efforts, recognition of successes and lessons learned gained by reviewing VE performance measurement help to convert the skeptical.

TYPICAL VM PROGRAM ACTIVITIES
VM program activities typically include the following activities:
• Establish VM program organization
• Establish program performance goals and benchmarks
• Develop VM program level procedures
• Ensure VE process procedures are fully compatible with business processes
• Develop support and training materials
• Assist project teams in selection of appropriate VE process
• Assist project teams in the implementation of appropriate VE processes
• Gather VE performance results
• Gather and share implementation lessons learned

The activities: establish goals, selection of appropriate processes, and gather and share implementation lessons learned are all dependent on performance results.

VM Program Performance Measurements
WHAT ARE THEY?
Performance Measurements quantify the productivity of the VM program. They are used to calculate the efficiency of VE and can represent the effect of VE on the project at the point of the application of the process.

WHY TRACK?
There are several very important reasons for tracking value performance. Measurements are important on both specific VE processes, applications and on the VM program as a whole. The major reason to track the performance of VM program/VE process is to show the results. Is the project better off after the application of VE? Did VE improve the functionality of the project? Is the project less costly, earlier delivery, better able to meet the demands of the end-user? Which type of VE process works best with the specific type of project? Answering these questions, and more, shows the results of using VE, which in turn proves the worth of applying VE.

1 Some value specialists use the term Value Management (VM) to define the organized creative approach, developed by Lawrence D. Miles in 1947, to the achievement of the required function in the most profitable manner. Others use the term Value Engineering (VE), or Value Analysis (VA) for the same process. In this paper, Value Engineering is synonymous with Value Analysis, and refers to the L. Miles process. Value Management is an overarching term that applies to the management of a Value Engineering program.
By analyzing the measurements and data, trends and lessons-learned can be discovered. These can be used to improve other projects within the company. The trends are used to determine which VE process to use on specific project types. They help to establish goals and objectives for the VM program and they can be used to evaluate performance of specific VE professionals.

**REASONS FOR NOT TRACKING VM PERFORMANCE**

With all the benefits of tracking VM performance, it is logical to ask, How come VE performance is not tracked in every case? The answer to this question is multi-faceted. A reason some VE practitioners give is that "Implementation of VE Recommendations is not known." Well this is the case if the VE practitioner is external to the organization, but the organization should know what VE recommendations are implemented.

Reasons given by VM program manager for not tracking performance data are:

- The lack of a central repository of VE data
- Difficulties tracking results
- Project managers leery that "savings" will be removed and hence they are reluctant to report the data
- A lack of measures value improvements that aren't cost related

While all of these reasons are difficulties, the benefits of reporting the results and finding trends/areas to improve the VE process outweigh any difficulties. If a VM program can show the results of using VE it will gain management support for the program. Once management supports the program, the reluctance of project managers can be overcome. Especially if "savings" can result in additional projects that benefit the organization as a whole.

**A MODEL FOR MEASURING VM PERFORMANCE**

The balance of this paper highlights how one organization, the US Department of State, Overseas Buildings Operations (OBO), is successfully measuring VM performance.

**OVERVIEW OF OBO**

The Mission of OBO is to:

- Assure U.S. diplomatic missions have appropriate facilities to achieve foreign policy objectives
- Oversee the Department of State's real property assets
- Provide all employees at U.S. diplomatic missions with safe, secure, and functional facilities

There are 260 posts that employ over 60,000 USG employees from 35 agencies. In FY02, OBO obligated $1,088 million dollars in projects. The value of work under management of OBO was $2.6 billion. OBO management is committed to using VE as a management tool during the planning and design of all major projects to assist in providing secure, safe and functional facilities.

**OBO VE OVERVIEW**

All OBO projects (over $1 million in estimated cost of construction) are required to perform a VE study at or before the project reaches the 35% design submission. If the project's estimated cost of construction is over $20 million, then the project must go through the VE process twice, once when the project is in planning and the second when the project is in design. The only exception to this requirement is if the project receives a formal waiver of the VE study requirement from OBO management. OBO follows the SAVE International recognized VE process. The typical OBO VE Study includes some pre-study familiarization time. During the VE study, the VE team completes the following tasks:

- Information Gathering
- Function Analysis/Cost Worth Modeling
- Speculation
- Evaluation
- Development
- Oral Presentation
- Presentation of Final Report

Independent "hard-hitting" VE Teams made up of professional architects/engineers/CVS, hired by the VE program manager, perform virtually all OBO VE studies. Project personnel formally participate in the VE study during the information gathering and oral presentation phases. During the balance of the study project personnel are available to answer questions or provide feedback to the VE team as needed.

After the study has been performed, the VE report is given to the project team for approval of the VE recommendations. If they disapprove of any VE recommendations, they must document the reasons for the rejection in a memorandum, through OBO management, back to the VE program manager. The project team then implements the approved VE recommendations.

**TRACKING OBO VE PERFORMANCE**

Two spreadsheet/database files are used to track and measure the performance of the OBO VE program. Simplistically one is a listing of VE proposals and the second is a summary of VE study results. The two files are "linked" together to allow for benchmarking and analysis of the data in a multitude of ways. The next two sections describe the two files in detail.

**VE PROPOSALS DATABASE**

The OBO VE proposal database contains almost every VE proposal/recommendation ever made in the OBO VE program, since its beginnings in 1988. It currently contains over 3000 individual VE recommendations. These fields in the database record the specific results from VE efforts. The fields in the proposal database are shown in the table on page 14.

**UNIFORMAT Field Description**

One key field is the "UNIFORMAT\(^5\)" field. At the conclusion of each OBO VE study, the VE team leader ensures that each recommendation includes the five-character UNIFORMAT code that most

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\(^2\) Posts include Embassies, Consulates, Special Interest sections, and other public diplomacy facilities.
Closely describes the proposal. If none are appropriate, they can use three-character code or one of the two characters or numbered codes provided by OBO at the end of the UNIFORMAT list.

Using the UNIFORMAT codes allows for the VE recommendations to be sorted/filtered by type of proposal. This in turn allows for a more in-depth analysis of trends and lessons learned. Attached at the end of this paper is the OBO UNIFORMAT Summary table.

**Benefits**

The VE recommendation database allows OBO to summarize VE recommendations in a wide variety of ways. One of the most powerful is the sorting by type of proposal. For example, if an OBO architect is considering changing the OBO standard for interior wall finishes, they could use the VE database to review every interior wall finish VE recommendation ever made - and the data is available in less than five minutes.

Another benefit of this database is the ability to check VE recommendation acceptance rates by type of proposal. So if the VM manager wants to see if there is a difference in VE acceptance rates by type of project. This database contains a summary record of every OBO VE study performed or waived. It also has records for projects in the OBO long-range plan that will require a VE study at some point in the future. A variety of information is tracked for each study, including the costs of the VE study, team make-up, type of project, etc. Below is a list of the fields included in this database.

**SUMMARY OF VE STUDY RESULTS**

This database contains a summary record of every OBO VE study performed or waived. It also has records for projects in the OBO long-range plan that will require a VE study at some point in the future. A variety of information is tracked for each study, including the costs of the VE study, team make-up, type of project, etc. This database makes analyzing the data or benchmarking trends very easy. Data can be compared/contrasted by any one or a combination of the database fields.

**CALCULATED FIELDS**

In addition to the standard fields shown in the two database files, there are several calculated performance measurement fields in the spreadsheets. The calculated fields include:

**PERFORMANCE REPORT SAMPLES**

The two database spreadsheets are often “linked” to allow for a wide variety of information and performance evaluations. The reports allow for review of VE acceptance trends and are used for management reports. The following charts/tables highlight a few of the reports available. In these samples identifying features, such as CVS firm names, and project names have been removed from these samples for classification and privacy considerations.

**CONCLUSIONS**

The OBO VE manager has used the OBO Databases to tracking VE performance, to create summary management reports, and for educational briefing materials. These materials are a main reason that the OBO VE program is growing, as shown by the increasing number of VE studies, the new requirement to perform two VE studies on major projects and by the doubling of the OBO VE program staff.

Another conclusion that is apparent is that OBO tends to focus on the cost savings benefits of performing VE studies. While it

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**Figure 1: Chart of OBE VE Program History**

**Figure 2: OBE VE Program History**
Fig. 3: ROI by Project Type and Stage

As of 12/30/02
Includes all projects since 1998

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Fig. 4: Detailed Uniformat Distribution SED Projects

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Fig. 5: Uniformat Distribution of VE Proposals-SED Projects

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Fig. 7: VE Services Contractor Performance Summary

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<th>Average Average VE Total Proposed Proposed/ Accepted Accepted/ Proposed Proposed/ Investment EEC</th>
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is that true that the current OBO VE databases focus on the cost aspects, it is planned in the very near future to add fields to the databases that will track non-cost related benefits of performing a VE study.

As shown by the OBO VE tracking system, measuring performance of VE programs is possible and it should be done. Measuring performance of the VM program proves the worth of the VE process; it provides a way to measure effectiveness of VE on different project types; and it can be used to identify needed VE process improvements. In summary, VM Performance measurements justify the use of VE as a management tool.

Kathy Bethany is the Department of State's Overseas Buildings Operations (OBO) Value Engineering (VE) manager, a position she has held since late 1998. She is responsible for ensuring effective implementation of all aspects of the VE program. Her duties include creating and implementing VE policy, management of VE studies, coordination of contractor submitted VE Change proposals, tracking of VE trends, and reporting on VE status.

Ms. Bethany earned a Bachelor of Science degree in civil engineering from Old Dominion University in 1981 and a Master of Business Administration from the University of New Mexico in 1994. She is active in SAVE International "The Value Society, " and currently holds the position of Vice President-Membership on the SAVE Board of Directors.

Attachments

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Volume 26, Number 2, Fall 2003 15
## Value Engineering Study Proposals - Select by OBO UNIFORMAT Work Group

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