

## Understanding Value Engineering (VE)

### Introduction

Today's owners are demanding that designers, construction managers and builders pay more attention to the owner's financial and economic objectives and demonstrate effective management of cost and, ultimately, of value.

Owner's expectations are straightforward. *Complete the project to required scope, quality and performance, all within budget, and deliver good value for money invested.*

Value engineering (synonymous with value management or value analysis) has been effectively applied to construction projects for many years. VE can be a powerful tool to address owner demands for economy, effectiveness and efficiency in their projects. The key is to apply VE correctly and with proper sensitivity to "value."

### What is value engineering?

Value engineering is a conscious and explicit set of disciplined procedures designed to seek out optimum value for money for both the first and the long-term investment. According to the Office of Management and Budget (OMB), VE is *"an organized effort directed at analyzing the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with the required performance, reliability, quality, and safety."*

Warren Buffett has a more succinct definition: *"Price is what you pay. Value is what you get."*

All involved in the project delivery process certainly *want* good value, but *delivering* good value requires a concentrated effort. In these days of rapid technology change, tight fees, challenging schedules and professional risk, time-honored and conservative solutions are often the result. In addition, the owner's guidance and requirements may be contradictory, overly restrictive or out of date. Using only an informal approach, professionals may find that good value is hard to obtain. Value engineering offers a more formal, professionally facilitated approach, and a corresponding opportunity for better results.

The owner's staff and the project delivery team may initially feel threatened by value engineering, or believe that the process is simply rehashing decisions already made. However, those who have participated in the process recognize that proper VE is a creative way to deliver true value for money. The process helps everyone look at the project from a different perspective; injects new expertise and points of view; and subjects criteria, standards and functional requirements to scrutiny through an objective process.

>> *Continued on page 3*

## Inside . . .

**President's Message** 2

**Project Spotlights** 4

**Chapter and Committee  
News** 5

**Of Interest to Members** 6

**Who's Who & What's What** 7

**Upcoming Events** 8

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You have a powerful resource at  
[www.cmaanet.org](http://www.cmaanet.org).

Bookmark the Construction Management Association of America's website for standard contract documents, publications, education, and access to more than 2,500 construction management professionals.

# President's Message

## **CMAA Southern California Chapter Board of Directors, 2004–2005**

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It is said that time flies when you are having fun. The feeling, if not consensus, is that the fun is coming back in the industry as the California economy continually shows signs of recovery. I hope for all of you that the last three months have flown by and that, like me, you are out there, busy pursuing those projects, winning a few, and enjoying it.

Our current practice of bringing to the membership only the big public owners who have the CIP budgets—and the big programs to go with those budgets—continues to be popular and well intended. In this last quarter, with so many owners now with rejuvenated budgets (such as Caltrans), we brought you an extra dinner event just to get information to you, the membership, in a timely manner. In the three-month period of April–June, we had presentations from Los Angeles World Airports; the Metropolitan Water District of Los Angeles County; Caltrans (covering Districts 7, 11 and 12); and later in June, the Great Park project planned for the former El Toro MCAS. In fact, the audience that came to hear Intissar Durham, chief airports engineer for LAWA, was the largest ever for a single dinner speaker, with about 200 people attending. And each of our speakers—Intissar Durham; Raja Mitwasi, chief deputy district director, Caltrans District 7; Eric Anderson and Wigs Mendoza of the MWD; and James “Walkie” Ray on behalf of the Great Park—foretold sizable capital improvement projects totaling several billion dollars, projects that will be coming to California over the next several years.

Well, if you have been attending these dinners, you have heard what they have to say. All I will add is that there are more good speakers to come. So don't miss out.

I would like to turn your attention now to another side of CMAA that we seldom hear about. I would like you to recognize and appreciate the national leadership of CMAA. This amazing group of professionals includes not only the volunteer national elected board members and committee members, but the full-time professional staff working in McLean, Virginia. Led by CMAA's executive director, Bruce D'Agostino, the team also includes Martha Montague, Bruce's executive assistant and events coordinator; Amanda Wolfe, certification director; Jim Tolliver, director of professional development; Mike Stark, director of government affairs; Laura Odom, director of finance and administration; Angeles Cervantes, membership coordinator; and Barbara David, professional development coordinator. These folks are working diligently to assist you and advance the programs of CMAA. Though I am on the phone with these folks throughout the year, in May I had the opportunity to get to know them during the spring conference in Denver, Colorado. They were very cheerful, and clearly committed to helping the membership. When you see them this September at the national conference here in Huntington Beach—You are going, right?—please say “hi.” I know they will appreciate it.

And on the subject of the spring conference, Chapter Past President Lisa Campbell (of Kleinfelder) and I were able to sit in on (OK, we crashed) some of the national board meetings and events to observe the workings of the board. We were quite pleased to see our 21 board members fully demonstrate their commitment, not just to CMAA generally, but to the chapters and their members.

>> *Continued on page 4*

>> *Value Engineering continued from cover page*

*Value engineering is not just a cost-cutting exercise . . . cost cutting is reducing cost without regard to value.* Value engineering may in fact reduce initial costs, but only when the delivered product meets the functional and value objectives of the client. VE can also be a vehicle to identify the cost and benefits of alternate approaches and to help clarify the cost impact of individual decisions.

Furthermore, value engineering is *not* a design review and is not intended to examine every detail and aspect of a project. Unlike a design review where individual disciplines review only their own discipline, the process is conducted as a team of multiple disciplines to assess the project collectively and examine where disciplines interact. Application of the Pareto Principle—*20% of the decisions in a project will affect 80% of the outcome*—helps the VE process to rapidly focus on key decisions and risks that have the most significant effect on cost and value. Scrutiny of the major decisions is essential.

## How is VE conducted?

The VE process is centered on an intensive workshop facilitated by a value professional. All involved in the project, including designers, constructors, consultants, project/construction managers and owner personnel, are invited to attend an intensive workshop. An independent team of experts may be included, at the owner's choice. The workshop may last from one to five days, depending on the size and complexity of the project.

## The VE workshop is intended to

- Ensure there is a clear determination of the owner's *value objectives* for the project.
- Assemble all necessary *information* about the subject—drawings, specifications, estimates, criteria, constraints, etc.—as well as pertinent information from other similar, representative projects.
- Ensure that any team participants have *excellent skill and experience* in the disciplines required.
- Analyze the *functions* to be performed within the facility, major *risks* associated with the project, and key *quality-cost* relationships.
- Examine important *attributes* of the project and assess those that are minimally *necessary* versus those that are *desirable*.
- Select areas of study based upon the *best potential for value improvement*.
- Use creative techniques to generate a wide range of *ideas* for possible alternatives to the current design.

- Evaluate alternatives identified against the value objectives and *select* those ideas worthy of further development.
- Develop preferred options, *using life cycle cost analysis* where appropriate.
- Present the *developed proposals* to the owner and the owner's staff.
- Prepare a *professional report* documenting the process, considerations, recommendations and actions required.
- Assist in follow-up and implementation.

## What are the benefits of value engineering?

The investment in value engineering is generally small in comparison to the potential benefits. Workshops can cost as little as \$15,000. In terms of savings generated, a return on investment of 20 to 1 is often achieved. When VE is conducted early in the design process, costs are minimal, schedule impact minor and benefits maximized.

In addition to any monetary benefits, value engineering workshops provide an opportunity for all key project participants to come together, step aside from day-to-day concerns, and look at the project from a different perspective. This produces several benefits:

- VE is an opportunity to explore and air a wide variety of alternatives, and to provide the owner the additional assurance of knowing that an explicit attempt has been made to seek out the best combination of solutions for the project.
- Value engineering focuses project participants on the issue of "value," which invariably includes issues other than simple cost value. This helps clarify project objectives and makes sure that the entire team is unified.
- VE injects life cycle costing and risk analysis into the process, and helps bring focus to other issues such as sustainability.
- The multidisciplinary nature of the workshops helps promote a wide variety of ideas for value enhancement, and those ideas that are developed will specifically address interdisciplinary issues.
- By placing all decisions under a "cost lens," the relative impact of achieving value objectives can be clearly understood and sensible trade-offs identified.
- A collateral benefit of value engineering is that cost estimates and budgets are reviewed, particularly for major cost drivers. Significant inconsistencies and misassumptions will generally be uncovered.
- Value engineering can help the owner demonstrate a balanced and proper concern for cost and value.

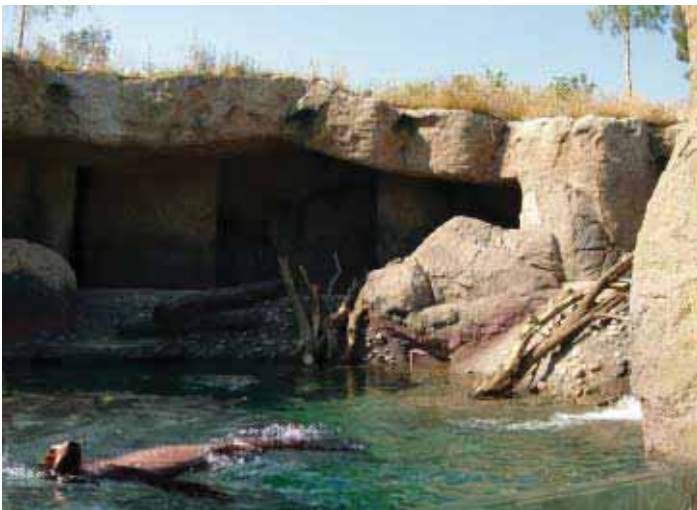
Article by Michael D Dell' Istola  
Vice President DMJMHN



# Project Spotlights

## Sea Lion Cliffs Exhibit grand opening at the Los Angeles Zoo

LOS ANGELES, CA (June 24, 2005) – The \$28-million (includes front entrance, Sea Lion Cliffs, Children’s Discovery Center) new home for the zoo’s California sea lions opened to the public on June 23, 2005, as part of the Los Angeles Zoo Bond and Capital Improvement Program. Councilman Tom LaBonge and Connie Morgan, president of the Greater Los Angeles Zoo Association (GLAZA), gave opening dedications. “This project has attracted some of Los Angeles’ most prominent philanthropic organizations and individuals who have so eloquently placed their seal of approval on the 25,000–square foot, state-of-the-art, interactive educational facility,” said Ms. Morgan.



The Sea Lion Cliffs Exhibit is a saltwater habitat with rocky coves, a beach, a naturalistic slide, two 165,000-gallon pools with varied depths, and two 20,000-gallon behind-the-scenes pools next to two rooms that serve as the sea lions’ bedrooms. The exhibit includes 25-foot-long glass underwater and water-level viewing areas for the public.

Swinerton Management & Consulting has been assisting the city with construction management services for the renovation and expansion of this six-year, \$110-million program (funded by Proposition K and CC) consisting of eleven exhibits, an animal hospital and infrastructure projects.

Project Architect: Esherick Homsey Dodge & Davis

*Swinerton Management & Consulting, Inc., offers program, project and construction management services throughout the United States and Canada to a diverse range of business clients that demand exacting performance. The hallmark of Swinerton’s success over the past 117 years of business is the principle of exceeding our clients’ expectations through innovative construction and outstanding customer service.*

>> President’s letter continued from page 2

These industry leaders from across the country were clearly focused on the fact that the membership is the backbone of CMAA, and the board is there to serve the membership. During one session the incoming national president, Bob Fraga of the United States Postal Service, presented a plan for better management and leadership within CMAA, highlighting the characteristics that make for exceptional association governance and operation. This was a study of goals, practices and characteristics governing the operations of the best-managed associations.

Many of you know, of course, that CMAA’s current president is Joe Seibold of PinnacleOne, a firm located right here in downtown Los Angeles. What you might not know, though, is the extra effort that Joe gives to CMAA, the agenda for growth and development he has proffered, the level of leadership he wields amongst his peers, and the respect he has earned from them. Joe Seibold has truly been an inspiration for this chapter’s leaders, and most certainly for other chapters as well. Again, as his term comes to an end in September, please let him know how his efforts have benefited our chapter, CMAA and the industry.

W. Scott Harral, CCM  
President  
Southern California Chapter



## The certified construction manager

There is a growing movement toward certification of construction managers to ensure that a construction manager has a certain body of knowledge, abilities, and experience. CMAA, through CMCI, awards the “certified construction manager” (CCM) designation to practitioners who meet its requirements by passing a technical examination. Applicants for the CMAA certification also must complete a self-study course that covers a broad range of topics central to construction management, including design management, knowledge of the professional role of a construction manager, legal issues, and allocation of risk. Certification also includes requirements for both formal academic training and professional project management experience. Although certification is not required to work in the construction industry, certification can be valuable because it provides evidence of competence and experience.

The benefits that accrue to professionally certified CCMs include acknowledgement by many owners that the services they receive are the best our industry has to offer. Public works agencies, school districts, and private owners are finding that certified construction managers can be relied on to provide a higher level of service. The CCM designation is becoming the *standard*, and is now required in some public agencies and private companies for promotions and for greater levels of authority.

The existing and growing value of certification is unquestioned. In response to the increasing appreciation of the CCM certification by owners, the Southern California Chapter of CMAA has formed a CCM committee tasked with increasing the number of certified construction managers within our membership. The committee will be meeting on April 8, 2005, to plan orientation seminars and a mentoring program to inspire and assist potential CCMs. If you are interested in the committee or in finding out more about the certification process, contact Bill Lacher, CCM, at [bill.lacher@vanir.com](mailto:bill.lacher@vanir.com), or contact the Southern California Chapter office.



## New CCM Certification Committee for the Southern California Chapter

The Southern California Chapter of CMAA has the largest membership of any chapter in the United States. In order to also be the *best* chapter in the country, we have formed a CCM Certification Committee with the objective of helping more of our members obtain the CCM designation.

The CCM Certification Committee meets bimonthly to plan CCM orientation and support events. We also strategize on ways in which the benefits of certification can be made known to client agencies and the leadership of firms that provide CM services. Please contact Kelly at the chapter office to find out details of planned meetings.

Presentations on the certification process and requirements are now made at the end of the professional development sessions that the Southern California Chapter offers.

Committee members are meeting with agencies and service providers to discuss the advantage of using certification, which establishes a “baseline of competency” in their organizations. Agencies with whom we are currently meeting or plan to meet with are LAUSD, L.A. County, City of L.A., USC, San Diego County Water, City of San Diego, Port of Long Beach, Port of L.A., and LACCD.

Finally, a pool of volunteer certified construction managers has been identified that will assist our members in the application process by answering their questions, reviewing their draft applications, and giving them moral support during the certification process. (Assisting you in the process actually earns these mentors points toward their recertification.)

CCMs that would be glad to help you during the certification process are as follows:

**Bill Lacher, CCM**

**Willie Paiz, CCM**

**Dave Anderson, CCM**

**Gary Allen, CCM**

**Scott Harral, CCM**

**Michael McAlpine, CCM**

**Mehdi Heydari, CCM**

**Ken Fredrickson, CCM**

**Brian Nelson, CCM**

All CMAA members are encouraged to begin the certification process now. The committee would like to see our Southern California Chapter be recognized as the best chapter at the annual conference in Huntington Beach this September!

If you would like more information about the CCM Committee, please contact the Southern California Chapter office at (562) 434-8409.

*Bill Lacher, CCM, LEED  
Vanir Construction Management, Inc.*

# Of Interest to Members

## New members, CMAA Southern California Chapter

Jake Agbayani Sony Pictures Entertainment	George William Hershman Swinerton Management & Consulting Inc.	James Owens, PE PSI
Hovel Babikian Cal Poly Pomona	Mark Hovatter Los Angeles Unified School District	Paul Papadeas Heery International, Inc.
Aramis Banuet PinnacleOne	Carl Lee Jablonski Swinerton Management & Consulting Inc.	Matthew Frank Para Cal Poly San Luis Obispo
C. Lance Barnett PinnacleOne	Bryce Johnston, PE HDR Engineering, Inc.	Epifanio Quijano Kautzor-Schroder Associates, Inc.
Sheldon Beebe APM, Inc.	Mike Joki GKK Works	Tanveer Rao HDR Engineering, Inc.
Daniel Black, PE Padre Dam Municipal Water District	Thomas Kim, PE HDR Engineering, Inc.	Lisa Reece HDR Engineering, Inc.
Sandra Bravo Cal Poly Pomona	Rodney Lane Swinerton Management & Consulting Inc.	Alejandro Reus Port of Long Beach
Aaron Bridgewater, PE Earth Tech, Inc.	Claude Le Feuvre Parsons Infrastructure & Technology Group, Inc.	P.J. Roach Cal Poly Pomona
Martha Chapman Integrated Construction Technology Corp.	Michelle Lewis Southern Polytechnic State University	Matt Seals Seals/Biehle
Jim Cowell Los Angeles Unified School District	Bill Lukehart Swinerton Management & Consulting Inc.	Nick Seals Seals/Biehle
Brian Day DMJM Management	Coleen Mayercheck Chambers Group, Inc.	Farhat Siddiqi, Ph.D., PE Geo-Environmental, Inc.
Jim Delker Los Angeles Unified School District	Ashok Mittal, PE Parsons Infrastructure & Technology Group, Inc.	Alexandra Spencer DMJM Harris
Natalie Deutsch DMJM Harris	Sherif Morcos, Ph.D. HDR Engineering, Inc.	David Sprandel California State University, Long Beach
John Doyle Los Angeles Unified School District	Rebecca Myers URS Corporation	Ralph Taber, PE CH2M HILL
Daniel Eneim Cal Poly Pomona	E. Alexander Negrete The JCM Group	Abraham Teclé University of Southern California
Dennis Eriksen, PE ATI Systems	Brian Nelson, CCM Vanir Construction Management	Shawn Wardlow C.W. Driver
Billie Greer Governor Schwarzenegger's office	Keith Nichols Lundgren Management Corporation	Jourdan Younis Cal Poly San Luis Obispo
Roger Henry Yang Management		

## Congratulations to our newly Certified Construction Managers (CCMs)

Michele David, CCM	Alsaleh Project Management, Inc.	2005
Kevin Hartmann, CCM	URS Corporation	2005
Raju Kaval, CCM	Parsons Brinckerhoff	2005
Roger Remolacio, PE, CCM	URS Corporation	2005
Lisa Sachs, CCM	Construction Controls Group, Inc.	2005



## Gateway Science and Engineering adds Bruce Thompson as senior construction manager

Bruce Thompson has joined Gateway Science and Engineering as a senior construction manager. Thompson brings to the firm over 36 years of experience in project and construction management. Thompson recently completed a successful assignment managing the \$4.7 billion Miami International Airport North Terminal Development Program. "We are very excited about having Bruce join our team and expand our presence in the air transportation marketplace," said Fernando Calderon, vice president of Gateway Science and Engineering.

## Swinerton Management & Consulting is pleased to announce Samuel R. Ramirez has joined our Los Angeles office as operations manager

Mr. Ramirez has joined Swinerton Management & Consulting, a division of Swinerton Inc., as operations manager for the Los Angeles office. Samuel will work companywide to strengthen our business development presence, and he will be assisting the organization with certain operational issues. Mr. Ramirez was formerly a business development executive with Turner Construction Co. Mr. Ramirez is an alumnus of the California Polytechnic State University, San Luis Obispo. He has 22 years of construction experience in the education, public works, commercial and health-care sectors.

Swinerton Management & Consulting, Inc., offers program, construction and project management services throughout the United States and Canada to a diverse range of business clients that demand exacting performance. The hallmark of Swinerton's success over the past 117 years of business is the principle of exceeding our clients' expectations through innovative construction and outstanding customer service. Visit [www.swinerton.com](http://www.swinerton.com) or [www.swinertongreen.com](http://www.swinertongreen.com) for more information.

*Swinerton Management & Consulting  
Tammy Lundgren, CPSM  
(213) 896-3479 [tlundgren@swinerton.com](mailto:tlundgren@swinerton.com)*

## Fund-raising initiative to benefit the construction engineering program at Cal State Northridge

As we enter the summer, the Student Chapter Committee continues its efforts to reach the student body and help our member firms gain access to the future of construction management. We were pleased to sponsor and attend a fund-raising golf tournament on May 23 that benefits the new construction engineering program at Cal State Northridge (CSUN). The Student Chapter Committee is looking forward to helping this program flourish. In addition, we are looking into new ways to offer incentives to the student bodies of CSUN and our other area universities to increase their participation in the Southern California construction management community. For example, we are currently in contact with the department heads to discuss the possibility of applying course credit for attending CMAA functions such as educational seminars and dinner events. In addition, the Student Chapter Committee is working with area campuses to attend career fairs specific to the construction engineering and technology majors. Attendance at events such as career fairs will advance our mission of helping our member firms gain access to the future talent of our industry.

## Plan now to attend CMAA's National Conference!



**September 11-13, 2005**

Hyatt Regency Resort & Spa,  
Huntington Beach, California.

- You'll be able to network,
- Discover new ways of doing business,
- Meet with exhibitors showcasing a wide range of products and services, and celebrate in recognizing the best individuals and projects in the industry.

**See you in Surf City, USA!**

**For more information and to register online, go to [www.cmaanet.org](http://www.cmaanet.org).**

# Upcoming Events

Some exciting events to look forward to . . .

July 21, 2005	Don't Let Overhead Be Over Your Head	Seminar	The Grand Conference Center, Long Beach
July 21, 2005	State of California, Department of General Services: Capital Improvement Program Update	Dinner	Marriott Downtown Los Angeles
August 18, 2005	What you Should Know to Defend Construction Claims	Legal Seminar	Long Beach
August 25, 2005	Developing a Collaborative Culture on a Project Team	Seminar	The Grand Conference Center, Long Beach

Get your personalized CMAA Southern California Chapter name tag for only \$20!

Please clearly print your name as you want it engraved on tag:

Name, Lastname: \_\_\_\_\_

Member since (date) – optional: \_\_\_\_\_

Company: \_\_\_\_\_

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Check enclosed for \$20

Please charge my credit card for \$20

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Name on card: \_\_\_\_\_

Expiration date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



## CMAA

### Southern California News

#### Spring 2005

CMAA Southern California News is published for the members of the Southern California Chapter of the Construction Management Association of America for the purpose of informing the members of local and national news, chapter events and industry trends.

Articles published in CMAA Southern California News contain the opinions of the authors and do not necessarily represent the position of the CMAA Southern California Chapter.

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