

***A Message from the President*****Sink or Swim**

Have you ever thought back on what it was like your first day of work as an engineer? Armed with all the knowledge acquired through four to six years of college schooling, you were ready to take on the world. You could draw a shear and moment diagram in your sleep and were a wiz with the computer (or slide rule as the case may be). You were ready to kick some butt, or so you thought.

Reality soon sets in as you try to adapt to an unfamiliar environment – the engineering office. Work is nothing like school; the pace is different, the vocabulary is different, all of the things you learned in school seem somehow out of context. Everyone expects so much. You are no longer in your comfort zone. You realize it's time to sink or swim.

Whether one sinks or swims depends a lot on who is there to give the lessons. Lessons need to come from many sources. This is how engineers develop their skills. Mentoring cannot be left up to one or two individuals, it has to be a family affair. It is up to all of us, whether we have just learned to swim ourselves, or if we are headed to the Olympic trials, to pitch in and share our knowledge. The next time you see someone gasping for breath, reach out and lend a hand.

*by Steven B. Tipping, SEAONC President*

***December 3rd Dinner Meeting Wrap-Up, The City Club, San Francisco*****Renovation of the San Francisco Ferry Building**

**Alan Kren, Rutherford & Chekene**

*by Jamison Curry, Program Committee Chair*

SEAONC salutations to Mr. Alan Kren of Rutherford & Chekene, who was the speaker at the SEAONC Dinner meeting on Tuesday, December 3<sup>rd</sup>. His colleague, Dr. Joseph Maffei warmly introduced him.

Mr. Kren was fortunate to have worked on

***January 7th Dinner Meeting Program, The City Club, San Francisco*****SCI Patented Construction Process for High-Rise Concrete Buildings**

***Bo Lundmark of Lundmark Associates***

*by Jamison Curry, Program Committee Chair*

On January 7<sup>th</sup> a joint ACI-SEAONC dinner meeting will be held at the City Club in San Francisco. Our friends at the American Concrete Institute have invited Mr. Bo Lundmark of Lundmark Associates to speak to us.

Mr. Lundmark has patented a method for construction of monolithic cast-in-place concrete high-rise buildings that utilizes a high degree of automation. The method is particularly well suited for residential and hotel high-rise construction.

The superstructure construction process may be divided into three distinct phases. First, a concrete core is constructed to the top of the building, using automated slip-form technology. The core then acts as the support for a "flying" form that is also automated and begins the construction of floor slabs from the roof downward to the foundation, each slab pour being accomplished in about a day. Concrete is heat-cured for early strength. Finally, as the slabs are being poured, exterior load-bearing wall construction begins, again from the top down to the foundation.

the restoration of the 110-year-old Ferry Building, a San Francisco icon. The Ferry Building, which anchors the foot of Market Street, has been in service since 1898. The current renovation is one of many projects underway along the Embarcadero, sponsored by the Port of San Francisco. The project came under the scrutiny of the City of San Francisco, the Bay Conservation and Development Commission, and the State Historic Preservation Officer.

Disassembly and reassembly of forms are eliminated. Repositioning of forms is automated, and may therefore be accomplished at night without personnel. This results in labor, time and cost savings.

Typical slabs are 5" thick and typical walls are 6" to 12" thick. Structural components are also utilized as architectural elements.

Conventional cast-in-place construction can cost 10 to 35% more than the SCI method and the method can save up to 50% of the time required for conventional concrete construction.

Mr. Lundmark was educated as a structural engineer in Sweden.

***Meeting Notice*****January Dinner Meeting**

**January 7th, 2003**

**The City Club**

155 Sansome Street, 10th Floor  
San Francisco

*Assembly 5:45*

*Dinner 6:30*

*Program 7:30*

Fax registration form on the back of this newsletter to the SEAONC office by  
**12 noon Friday, January 3rd.**

*Continued on page 2*

**Commentary re: SEAONC News Nov. 2002 issue's  
"Quality Assurance Challenges Column"**

Editor:

Art Dell's article is most apropos and timely, as it highlights one of several inadequacies of the UBC (now also in the new IBC) provisions involving shotcrete. ACI Committee 506 on Shotcrete is soliciting members for a task group to address said inadequacies, some of which are at odds with both ASTM and ACI.

As an active member of both SEAONC's CQA Committee and ACI's 506 Shotcrete Committee, as well as having several years' experience with shotcrete, I would like to elaborate on a couple of points made in Art's article relating to the UBC requirement for taking a minimum of 3 cores from the completed structure, Section 1924.11.2.

The code wording in question: "*—cores taken from areas chosen by the design engineer which represent the worst congestion of reinforcing bars occurring in the project.*"

The "worst congestion" implies most highly stressed. What engineer is going to allow coring through the most highly stressed rebar? Probably none, so the code says it's OK to add extra bars to non-congested areas. I suggest there are two problems with this approach that totally defeat its purpose: (1) most knowledgeable/alert nozzlemen will recognize those situations and take extra care to encase the bars; and (2) placing the extra bars in a "noncongested area" no longer represents the "worst congested area" which was the original intent. So, unless you completely duplicate (at considerable extra cost on many projects) the "worst congestion," you're really not accomplishing the objective.

Furthermore, taking cores through completed walls that are either basement or retaining walls raises the potential for built-in leaks.

The far better solution is to go through a comprehensive prequalification process. This should include one or more mockup panels, which duplicate worst case congestion and/or other built-in obstructions, or conditions not conducive to good shotcrete application (such as deep recessed pilasters in a relatively thick wall). Each nozzleman scheduled for the project should be so prequalified, all using the same shotcrete mix design and equipment that will be used on the project.

Someone (the same project engineer, resident or special inspector that will witness the in-place work) must document all the above information so that he/she can verify that in-place work is done exactly the same. I can't emphasize enough the importance of continuity of all personnel and procedures from the mockup through shooting the structure! It's also a very good idea to retain the mockup and the cores from it until the project is completed, in case of disputes as to what was acceptable.

I should also point out that the code allows some discretion with respect to obtaining those in-place cores. Section 1924.11.2, the one in question, ends with "*Exception: shotcrete work fully supported on earth, minor repairs, and when, in the opinion of the building official, no special hazard exists.*" Granted, you may have to go to some lengths arguing with the building official, but if you have a

completely representative mockup, and use the arguments noted above, you should prevail.

I would also note that on many of the more basic ("easy") jobs, well-documented references from some other more difficult project might be acceptable, thus saving the costs involved in mockups.

The matter of acceptance criteria is a more difficult issue. The ACI 506.2 "Specification for Shotcrete" provision for core grading is in the process of being revised to allow its use only for evaluating or qualifying nozzlemen. It should not be used for acceptance or rejection of a structure. Here again, the emphasis is on prequalifying everything before the actual work is started.

The nozzleman is the key person in achieving good sound shotcrete. To that end, ACI, with help from the American Shotcrete Association (ASA), has formalized a nozzleman certification program that is now in use across the USA. It requires passing of a 60-question written exam, an oral interview of performance essentials a nozzleman must know, and shooting of a test panel with rebar, which is subsequently cored and evaluated. The entire program is administered by ACI-approved examiners. The program is fairly basic (single layer of rebar in a 3 1/2" deep panel), so it won't take the place of prequalification mockups on many projects. But it does require the nozzleman to study and understand the materials and processes he is using, including such items as concrete basics, importance of curing, effects of weather, importance of compaction, etc. When ASA sponsors a certification session, they require the nozzleman to attend an education/training module as a prerequisite. Again, in the case of basic/"easy" projects, ACI certification may suffice, in lieu of mockups.

--Merl Issak

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## Ferry Building

*Continued from page 1*

The building and tower are founded on approximately 5000 Douglas Fir timber piles. The 240-foot tall tower springs from the center of the 152-foot x 660-foot 3-story lower portion. The steel skeleton of the building has thin concrete floors and a timber roof. Although the gravity system was well thought out, the lateral system was not continuous.

Just as often happens today, the California voters narrowly passed a bond measure to build the structure in 1892. A. Page Brown won the commission to design the building from the State Harbor Commission, but after Mr. Brown's untimely death, Architect Edward Swain and Engineer Howard Holmes took over the project. Once design was finished, it took two years to drive the piles and build the pier caps and deck. The superstructure took another two years and the building was opened in 1898. Lots occurred after that — the 1906 earthquake, the construction of the Bay Bridge, the reuse of the Ferry Building as an office building, the construction of the Embarcadero freeway and the Loma Prieta earthquake.

The renovation was performed using the State Historic Building Code; a building must be a qualified historic building to use this code. A century's remodeling was cleared and the central nave of the building was reopened.

The Ferry Building is scheduled to reopen to the public in March 2003.

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# Quality Assurance Challenges Column

by Art Dell, CQA Chair

*This is the second in a series of articles about real life jobsite Quality Assurance challenges, triumphs and disasters. As testimonials or cautionary tales, these experiences can help you achieve similar success or avoid similar pitfalls. Please – contact me if you have a good story to tell. No names or specific project identification of any sort will be used.*

A Bay Area structural engineer designed a reinforced concrete inverted T-beam roof structure for a munitions storage facility for one of the branches of the armed services. The span was long and the bottom longitudinal reinforcing steel included two layers of heavy and congested steel.

Rebar shop drawings came in and were reviewed and stamped “No Exceptions Noted” by the design engineer. The shop drawings indicated staggered lap splices of the bottom steel.

The rebar cages were fabricated entirely in the shop and shipped to the remote site. The civilian employee charged with oversight of the project took one look at the cages on the ground and immediately called the engineer. “There’s no room for concrete here,” he said. “It’s a solid layer of steel at the laps! I think you had better come out here.”

The military uses a system called “Contractor Quality Control,” or CQC, whereby the contractor is charged with performing all required inspections. This is usually done through a testing agency employed by the contractor. The owner is still free to perform whatever Quality Assurance inspections they may choose to do. However, under the CQC system the owner’s QA effort is usually limited to monitoring the performance of the contractor’s Quality Control. The contractor’s inspector apparently did not note any concerns with the rebar cages.

The engineer looked at the specifications language from the military’s SpecsIntact system, which states that splicing shall be “as indicated or in accordance with ACI 301.” ACI 301 says to make splices as indicated or otherwise permitted. Although no splices were indicated in the contract drawings, shop drawing review could be interpreted as permission to splice. The engineer is not too worried yet – surely the contractor’s QC inspector should have picked up the insufficient clearance between bars and straightened it out before all the cages were fabricated and shipped.

At the base, prior to heading out to the site, the engineer meets with the military’s management including the Lieutenant Colonel in charge of construction. The Colonel is adamant that the design is flawed, the engineer’s shop drawing review constitutes permission to splice, and that any extra cost associated with required re-work will be charged to the engineer. Now the engineer is worried.

At the site, the bars were indeed found to be too close together at the laps. The engineer delicately suggested to the contractor that the fabricator should never have proceeded with placing of bars that do not meet the code spacing requirements, and that the CQC inspector should have noted the deficient clearance. The contractor’s reply was, “you designed it, you approved the shop drawings, and we built it accordingly. Any refabrication is extra.” A meeting was set up for that afternoon at the base with all parties involved.

UBC 1907.6.1 gives the minimum clear spacing between parallel bars in a layer as db but not less than 1 inch. Clear spacing also has to be at least 1-1/3 times the nominal maximum size of the coarse aggregate (UBC 1903.3.2). These provisions, however, are essentially design instructions to the engineer, and do not necessarily bind the contractor.

The engineer took some careful measurements of the bar layout and drew a scale drawing of the worst cases. It was determined that the bars could be re-spaced such that a minimum clear spacing of 7/8 inches could be obtained. Although this was less than the code minimum (the bars were #10), it was felt that if adequate encasement could be obtained, the beams would function well. However, the approved mix design included one-inch aggregate. This would definitely be a problem with the reduced clearance.

The contractor had a good reputation and had done excellent concrete work so far. Although they had initially taken a hard stance, they were aware that they were not without liability. The engineer met privately with the contractor prior to entering the afternoon meeting with the Lt. Colonel. A compromise was worked out and, ultimately, the contractor agreed to manually respace the bars (without taking anything apart), and to change the mix to a 3/8-inch aggregate mix with a plasticiser to improve placeability. No extra charges were assessed.

The engineer traveled to the site again to observe concrete placement. The contractor placed and vibrated the concrete carefully and when the forms were stripped the beams looked great.

The moral of this story is twofold: shop drawing review is an important Quality Assurance tool, and oversights can lead to increased liability; and, engineers and owners beware the Contractor Quality Control program – without a substantial Quality Assurance effort to go along with it, construction quality will suffer.

## November 12th Program Summary, UCB Faculty Club

### Lou Harrison Residence, High Performance Straw-Bale David Mar, Tipping + Mar Associates

by Jamison Curry, Program Committee Chair

Tuesday, November 12<sup>th</sup> was the annual East Bay meeting of SEAONC. A dozen structural engineering students from UC Berkeley, introduced by Mr. Samuel Tan, joined us.

Mr. David Mar, himself a Cal alum, made a presentation on straw-bale construction, both here in California and in China. Tipping Mar was responsible for the structural design of the Harrison Residence in Joshua Tree, California. Mr. Mar described the full-scale testing program of a straw-bale arch structure, which was the main structural component of the house. Performance goals for the test were that the structure remain elastic at forces corresponding to 0.3 g acceleration and that the structure have an ultimate strength at forces corresponding to 1.0 g acceleration. These goals were met.

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## BUSINESS FORUM JANUARY 2003 NEW YEAR PROGRAM:

### *Structural Consulting Engineering Business Using Computer Software for Financial Control and Project Management*

**Date:** Wednesday, January 22, 2003  
**Time:** 12:00 – 1:30 p.m., Lunch/Program  
**Place:** City Club  
155 Sansome Street  
San Francisco, California  
**Speaker:** Mr. Donald Stock  
Washington Street Group  
Quickbooks Software  
**Meal Choice:** Chicken, Beef, or Pasta

Financial management of a consulting business enterprise is outside the usual engineering education you receive in college. As owners of firms you are responsible for documenting and controlling the assets and liabilities of your firm. A successful company depends on technical excellence and business profits to pay wages and expenses. Business Forum firms use different methods and software to document and record the financial aspects of their businesses. Our January meeting will address consulting engineering firm Financial Control and Management using computer software. Topics to be addressed include use of software for:

#### **PROJECTS:**

Project Management - Budgets and Cost Accounting  
Labor Budgets & Effort Tracking  
Invoices and Billing

#### **COMPANY**

Company Balance Sheet and Financial Statement  
Assets and Liabilities

Income Statements  
Revenue  
Costs  
Overhead - line items  
Income and Expenses  
Company Budget Analysis  
Account Payable  
Payroll and Taxes

This meeting offers firms an opportunity to see how new low-cost software can be used to provide information and improve the financial performance of your consulting engineering practice. This is also an opportunity for you to share and learn business practices from other firms. The Business Forum welcomes all SEAONC members and Project Managers to attend this meeting.

**Make reservations by calling the SEAONC office (415-974-5147) by noon, Monday, January 20, 2002.**

**Cost:** \$20.00 Business Forum Member  
\$30.00 Non-Business Forum Member

*Join the Business Forum and save \$10.00 a month on the luncheon! Yearly dues is \$150 for firms of six or more employees and only \$75 for firms of five or fewer employees. Call the SEAONC office directly at 415/974-5147 to join. This is an opportunity to join a committee whose only requirement is that you eat a great lunch each month with us and receive some good information about running your business.*

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### **Public Affairs and Membership Committee: Planning for Rebuilding Together; Call for Nominations for Community Involvement Award**

*by Derrick Roorda, PA&M Committee Chair*

The Public Affairs and Membership committee met on December 4 and is planning to meet on the second Tuesday of every month. Please see the SEAONC website for planned meeting dates. Anyone who is interested is encouraged to attend! While the committee has a number of exciting things brewing, the following are most worthy of your attention at this time.

Planning has begun for SEAONC's participation in Rebuilding Together at the end of April. Once again SEAONC will provide volunteers to help rebuild the home of a less fortunate member of our community. A major part of our effort includes the selection of a construction captain, an individual with construction experience who is willing to organize and plan the overall effort prior to the day of the event. Interested parties should please contact Jennifer Lynn with Degenkolb Engineers at 510/272-9040.

Nominations for the annual SEAONC Community Involvement Award are now being accepted. The intent of the award is to recognize a SEAONC member who has demonstrated outstanding involvement in his or her community. The award not only recognizes the level of commitment this individual has to both SEAONC and the community, but how the individual has improved the public perception of structural engineering and SEAONC as an organization. To nominate an individual, please see the flier in this month's newsletter or call Derrick Roorda with DeSimone Consulting Engineers at 415/398-5740.

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### **Straw-Bale**

*Continued from page 3*

Mr. Sig Freeman of Wiss, Janney, Elstner performed a peer review of the structure. His site-specific capacity spectrum curves predicted that the structure would require a ductility of 4-9, which Mr. Mar's capacity tests confirmed.

The typical construction consisted of straw bales, 2-feet x 4-feet x 16-inches, with stucco outside and inside face shell, with wire crossties. The face shells, or skins, provide vertical load bearing capacity and the bales provide buckling resistance. Ductile straw bale core walls were designed using a strut and tie model. Mr. Mar showed many details from the project, all of which had to be created and thought out, for straw bale houses are not typically engineered. Among the details shown were the arch spring point, the wall connection to the foundation and corner reinforcing.

Mr. Mar made mention of research into straw bale construction that is being undertaken at the University of Illinois.

Mr. Mar also described the use of straw bale construction in China. Straw bale construction is not only seismically safer than vernacular heavy timber and brick architecture, it is also considerably more energy efficient than common yurt housing. About 600 units of straw bale housing were built in China last year.

Our thanks to Mr. Mar for a very interesting presentation.

*Repeat Ad for  
Computers and Structures*

# Bulletin Board

## Free Seminar on Tri-Chapter Structural Amendments

The City of San Jose is presenting a half day free seminar for interested engineers on the subject of Tri-Chapter structural amendments that have been adopted by many jurisdictions throughout bay area. The amendments cover load combinations, Structural Systems (Table 16-N), Drift Limit, 1997 AISC Seismic Provisions, etc. The seminar will be held in the City of San Jose Council Chamber, at 801 N. First St., second floor between 8:30 to 12:00 noon on January 17, 2003. Please RSVP Ken Thurman at (408) 277-5742. For additional information please check out our web site at <http://www.ci.san-jose.ca.us/building/cityweb/Seminars.html>.

## SEAONC Excellence in Structural Engineering Awards Call for Entries

For rules and an entry form, please see flyers in this month's newsletter, or go to the member section of the SEAONC website, [www.seaonc.org](http://www.seaonc.org).

## SEAONC Spring Seminar

The SEAONC Spring 2003 Seminar: New Trends in Performance-Based Design, will be held Wednesday, March 12, 2003 and Wednesday, March 19, 2003. More information and registration forms will be available in the February SEAONC News.

## Promotions at Arup SF

Arup announces the promotions of Ms. Pamela Brandon, PE, SE, to Associate Principal, and of Larry Chambers, BS, to Associate. The firm was established in the US in San Francisco in 1985 to provide professional engineering service which extends the Arup philosophy and design approach to American architects and clients. The ideas and principles of Sir Ove Arup, the founder of the firm, are still a driving force in the practice. Foremost among these are a belief in 'total design' - the integration of the design and construction process and the interdependence of all the professions involved; the creative nature of engineering design; the value of ingenuity and invention, and the social purpose of design.

## YMF Committee Meeting

The next YMF Committee Meeting will be held Tuesday January 21, 2003 7pm at Thallasa (Pool Hall, 2367 Shattuck Ave, Berkeley).

## SEAOC Fellows Honored

Two SEAONC members, Ted Zsutty and Ron Gallagher, were honored at the December 3rd SEAONC Dinner Meeting at the City Club, for being selected as SEAOC Fellows. Congratulations!

## Applicants Sought for US/China Research Exchange

US researchers in the fields of earthquake studies, earthquake engineering, and earthquake hazards mitigation are invited to participate in the US/PRC Research Exchange Program in Earthquake Studies. The program is designed to further cooperative research in earthquake hazard mitigation between the United States and the People's Republic of China (PRC). It is jointly sponsored by the National Science Foundation (US) and the Ministry of Construction (PRC), and coordinated by the Multidisciplinary Center for Earthquake Engineering Research (MCEER), headquartered at the State University of New York at Buffalo. Applications are now being accepted for placement during the spring of 2003. Applications may be downloaded from the MCEER web site at <http://mceer.buffalo.edu/outreach/intActivity/usPrc2002.asp>.

## New Members

### Member SE

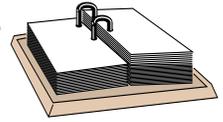
Bounmy Soumountha, Sr. Plans Exmnr  
City of Santa Clara

### Member

Vincent Borov, Senior Engineer/2002  
MMI Engineering, Inc  
Randy Collins, President  
FTF Engineering, Inc.  
Nathan Ingraffea, Staff Engineer  
Simpson Gumpertz & Heger  
Jeff Schalk, Engineer  
ZFA Structural Engineers  
Lori Simpson, Associate  
Treadwell & Rollo  
Mark Tobin, Engineer  
Forell/Elsesser Engineers  
Eric Uhrenholt, President  
Diamond Services

## EVENT CALENDAR

Jan. 7 Dinner Meeting, The City Club, San Francisco



Jan. 21 YMF Committee Meeting, 7pm, at Thallasa (Pool Hall, 2367 Shattuck Ave., Berkeley)

Jan. 22 Business Forum Luncheon, The City Club, San Francisco

Feb. 3 Small Business Group (SBG) meeting

Mar. 12 and 19 SEAONC Spring Seminar: New Trends in Performance Based Design.

## Small Business Group Meeting

The next Small Business Group (SBG) meeting will be on Monday February 3, 2003. It will be a lunch time brown bag gathering from 12:00 to 1:00 pm at the Mechanics Institute, 57 Post Street, Room 405, in San Francisco. The tentative subject is group health insurance. Look for more information regarding this gathering in the February Newsletter.

### Associate

Manu Garg, Designer  
Degenkolb Engineers  
Morgan Griffith, Staff Engineer  
Mesti-Miller Engineering, Inc.  
Arne Halterman, Designer  
Degenkolb Engineers  
Joe Kon, Assistant Engineer  
Peoples Associates Struct. Engrs.  
Keith Ma, Structural Designer  
Holmes Culley  
Hossein Sanikhatam, Structural Design  
Ahern, Knox & Hyde, Inc.  
John Wiley, Designer  
Degenkolb Engineers

### Student

Mikael Gartner, Graduate Student  
University of California Berkeley

# SEAONC SCHOLARSHIP FUND

The SEAONC Board of Directors established The SEAONC Scholarship Fund to assist the organization in promoting the future well being of the profession by encouraging engineering students to select structural engineering as their field of study. The fund was established with a contribution of \$50,000 from the reserves of the organization in 2000-2001. Fund growth that will allow increased size and/or number of scholarships and amounts is a goal. In addition to the initial SEAONC contribution, annual contributions will also be required to ensure the success of this program. These annual contributions will come from individual members and member firms. The Board's goal is to establish a fund that will grow to a point that it becomes self-sustaining within approximately 10 years.

The initial concept is for the scholarships to be awarded to undergraduate engineering students that are about to make decisions about their future professional direction. We believe

that this program will help to signal to young engineering students of the vitality and professionalism of the structural engineering field. As appropriate, future boards may expand the program to also include graduate scholarships or other activities of this type.

We appreciate the contributions that have already come to the fund this year from members contributing through their annual dues statement. If you missed this opportunity, we encourage you to send a contribution to the SEAONC office, at 74 New Montgomery, Suite 230, San Francisco, CA 94105. **Please make checks payable to SEAONC, and indicate "Scholarship Fund" on the check.** Member donations will be acknowledged in future newsletters. All funds that are donated by members or member firms will be strictly held for use as part of the scholarship fund.

**We acknowledged the generous contributions to the fund received through October in the November 2002 newsletter. We would like to acknowledge the generous contributions received since that publication, from the following members and firms:**

## \$1000 and above

*Johnson Western Gunitite Company*

## \$100 - \$500

*A. J. Miller & Associates*

*Dynamic Isolation Systems*

*International Civil Engineering Consultants Inc*

*Meece Engineering*

*Patrick Buscovich, Structural Engineer*

*Quilici Engineers Inc.*

*Constantine Shuhaibar*

*Structus, Inc.*

*Waleed Mari & Associates*

## \$50 - \$99

*Adept Structural Engineers, Inc.*

*Gregory Shriver, Independent Code Consultant*

*Jon Brody Consulting Engineers*

*Kutzmann and Associates, Inc.*

## Under \$50

*Lewis Cavin*

*Raymond Lundgren*

*John Miller*

*Andrew Mole*

*Russell Nygaard*

*Alex Rood*

*Kenneth Wyatt*

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**Biggs Cardosa Associates** is the largest structural engineering firm in the South Bay and the ONLY California Structural Engineering Design Firm to be ranked in the Zweig White Hot Firm 2002 list, which ranks the 100 fastest growing U.S. Architectural, Engineering and Environmental Consulting Firms. Would you like to join us and become part of our dynamic, growth-oriented team? We have an immediate opening for a Senior Structural Engineer or Structural Project Manager for our San Jose office. Do you have a minimum of 8 years experience in building design and a California SE? Please contact us by visiting our website at [www.biggs-cardosa.com](http://www.biggs-cardosa.com) and submitting your resume online, or by calling Michael Thomas at 408/296-5515. The exact position and compensation will be based on the candidate's experience.

**DeSimone Consulting Engineers (DCE)** has immediate openings in our San Francisco office for outstanding PEs or SEs with excellent communication skills and experience in new design and seismic rehabilitation of existing buildings. We offer a competitive benefits package and a great work environment. Please fax resume to Ron Polivka at 10 United Nations Plaza, Suite 410, San Francisco, CA 94102 (415/398-9834) or e-mail to: [rpolvka@de-simone.com](mailto:rpolvka@de-simone.com)

**Forell/Elsesser Engineers**, an award-winning structural/civil engineering firm, offers outstanding career opportunities to engineers and CAD drafters with all levels of experience who seek a dynamic, challenging and rewarding work environment ([www.forell.com](http://www.forell.com)). Work on exciting projects and collaborate with innovative design engineers. We offer an unparalleled salary & benefits package, including employer matched 401(k), pension and incentive compensation plans. Contact: Jim Guthrie, 160

Pine St. #600, San Francisco, CA 94111; fax 415/837-0800 or [jim@forell.com](mailto:jim@forell.com)

Structural designer position available with a Modesto based structural consulting office. 3 years experience in designing concrete, CMU, steel, and wood structures. Must have good communication skills and be conversant in AutoCad, SAP 2000, ETABS. Send résumé to **Lawder Engineering**, PO Box 3206, Modesto, CA, or fax to 209/521-1166.

**RPSE**, [www.rpse.com](http://www.rpse.com), in business since 1960, has a long AND successful track record of innovative and creative structural solutions. Projects range from relocating historic buildings to retrofitting health care facilities. Our name is well known for quality – something we earned via our quality team members. If your strengths include communication and critical thinking, e-mail: [sharonberman@rpse.com](mailto:sharonberman@rpse.com) or fax cover letter and resume to HR-Sharon, 650/428-2861.

**Structural Design Group of Santa Rosa**, is looking for a highly motivated, technically skilled engineer looking for a leadership position in an exciting young firm. Associate position available for a bright, creative individual with 2 years minimum design experience in educational facilities, low rise commercial, or residential structures. We offer unlimited opportunities for career advancement and an excellent salary/bonus/benefit package. Please fax résumé to 707/284-3646 or e-mail: [RichB@s-d-g.net](mailto:RichB@s-d-g.net)

**CRJ Associates**, a Menlo Park A&E firm, is looking for structural design engineers at all experience levels. Possession of a P.E. or S.E. license is desirable; expertise using structural design software and Autocad is a plus. Our firm specializes in design of new commercial buildings, as well as evaluation and retrofitting of existing structures. Flexible office hours, excellent salary and benefits. For more information, please visit our web-site at [www.crjarch.com](http://www.crjarch.com). Please e-mail resumes to Julie at [hr@crjarch.com](mailto:hr@crjarch.com) or fax to 650/324-0927.

**DASSE Design Inc.** has opportunities for project engineers in its Oakland, San Francisco, and San Diego offices for people who are passionate about structural engineering. Minimum qualifications are BSCE (MSCE preferred), PE or SE license and 3-8 years

experience on a variety of structures of increasing size and complexity. DSA and OSHPD experience a plus. Position requires strong computer skills, excellent verbal/written abilities and a desire to grow in a collaborative, professional environment. DASSE works with award-winning architects on health care, civic, K-12 schools, college/university and corporate facilities, using steel, concrete, timber, and masonry, in both new construction and renovation. Our projects are challenging and diverse. Send resumes with cover letters to William Andrews by fax (415/243-9165) or e-mail ([andrews@dasse.com](mailto:andrews@dasse.com)). Learn more about our firm at [www.dasse.com](http://www.dasse.com).

**Hohbach-Lewin, Inc.** is ready to fill a senior position in its San Francisco office. A candidate should be a licensed S.E. and have demonstrated strong technical and management capabilities. Responsibilities will include project management and engineering, business development, quality assurance and internal staff management. Inquiries may be directed to [alee@hohbach-lewin.com](mailto:alee@hohbach-lewin.com) or [dhohbach@hohbach-lewin.com](mailto:dhohbach@hohbach-lewin.com).

**Lionakis Beaumont Design Group Inc.**, largest A/E firm in the Sacramento region, presents an exceptional career opportunity for a qualified Structural Engineer and Drafter. We are a progressive, award-winning, multi-discipline A/E firm offering opportunities in diverse market types, flexible work environments and great studio teams. We offer excellent benefits & competitive salaries. Structural Engineer - Minimum 2-years experience in structural design and detailing of buildings required. California CE, SE preferred. Strong communications/teamwork skills essential. Structural Engineering Drafter - Minimum 6-years experience drafting single and multi-story buildings that utilize a variety of construction materials. If qualified, please forward a cover letter referencing this ad along with your resume to [jobs@lbdg.com](mailto:jobs@lbdg.com) or Fax to 916/558-1919. Visit our website at [www.lbdg.com](http://www.lbdg.com) to see the exciting project types we design and the unique employment environment we have created. EOE.

**MBA Structural Engineers, Inc.** seeks project structural engineers with 3 yrs. min. experience. We offer a strong compensation package, including flexible hours, retirement plan, bonuses, and full family medical coverage. Send your resume to 1717 N.

## Job Forum, continued

California Blvd., Suite 2A, Walnut Creek, CA 94596, or fax to 925/933-6140, or e-mail to [mbaeng@pacbell.net](mailto:mbaeng@pacbell.net).

Customer Support/Training Engineer (Carlsbad, CA). **RAM International**, a world leading structural engineering software company, is seeking an EIT or PE to assist in servicing its rapidly growing product and customer base. Job duties include customer support and training via telephone, at customer sites and organized seminars. At least 2 years experience in design of buildings and hands-on experience with the RAM products required. M.S. in engineering desired with good understanding of both structural engineering and engineering software. Requires excellent oral and written communication skills and some travel. E-mail [mikem@ramint.com](mailto:mikem@ramint.com) or fax 760/431-5214.

**Structural Engineering Solutions, Inc.** Supervising Principal Structural Engineer. SES, the structural division of one of the premier civil engineering firms in the Napa Valley, is looking for a leader to take the firm to the next level of development. This individual will be responsible for hands-on project management and business development in our diverse structural engineering practice. Our projects include a mix of residential, winery, resort & hotel, commercial and industrial structures. This position is responsible for maintaining our profitability while growing our client base. Centered in Napa, Sonoma, Marin and Solano counties, we need a take-charge individual who will seize the opportunities within this area. Qualifications include: CA SE with 10+ years experience, minimum of 3 years in management position, strong technical background, proven business development skills, an interest in working in a team-oriented, entrepreneurial environment that rewards initiative and excellence. Excellent salary and benefits package includes sizeable bonus opportunity. Equity participation is a real possibility for the right candidate. Contact: Rosanne Nocerino, Structural Engineering Solutions, Inc. 1500 Third Street, Suite F, Napa, CA 94559 Fax: 707-252-7094 [jobs@strucsol.com](mailto:jobs@strucsol.com)

### Job Forum Insertion Fee:

\$150 up to 450 characters/spaces  
\$15 for each 45 characters/spaces thereafter. All job forum ads will be posted on the SEAONC web site.



Saiful/Bouquet Inc., an award-winning, dynamic structural engineering firm, is seeking motivated structural engineers with excellent technical, teamwork, and communications skills at all levels. Engineers who are technically skilled, open-minded and service oriented will find tremendous career growth potential in our fast-growing office.

Multiple positions are available for engineers with 0 to 20 years of experience in the following areas:

- Local concrete, steel and wood design of new buildings and seismic strengthening
- Conventional to cutting edge computer analysis (SAP, ETABS, RAM, nonlinear analyses)
- DSA and OSHPD experience
- Building Investigation/Assessment

Please visit our website at [www.sbise.com](http://www.sbise.com) for an overview of our projects and practice. Fax or email your resume to:

Mehran Pourzanjani  
[mehran@sbise.com](mailto:mehran@sbise.com)  
(626) 304-2676

**Reminder: February Newsletter Deadline: Friday, January 10, 2003**  
submit to: [seaonc@ix.netcom.com](mailto:seaonc@ix.netcom.com)

### Posting for Membership

#### Member SE

Ching Wu, Senior Project Engineer  
Bechtel Corporation  
Natarajan Venkatachalam, Plan Check Engineer  
City of Fremont

#### Member

Alexander Cox, Project Engineer  
Tipping Mar & Associates  
Amarendra Prasad, Senior Engineer  
Beyaz & Patel Inc.  
Victor Wu, Structural Engineer  
Carollo Engineers  
Chien-Lung Tien  
ABEL Consulting Engineers

#### Associate

Nicholas Murray, Design Engineer  
T.Y. Lin International

#### Student

Johanna Brazier, Graduate Student  
UC Berkeley  
Jennifer Lovejoy, Graduate Student  
UC Berkeley

### Display Ad Rates

**Full Page \$900/mo.**  
**2/3 Page \$600/mo.**  
**1/2 Page \$480/mo.**  
**1/3 Page \$360/mo.**  
**1/4 Page \$270/mo.**  
**1/6 Page \$225/mo.**

Rates are for finished camera-ready black and white ads. Full payment is required at time of insertion order. For advertising contract, specifications, and special rates for running an ad multiple months, contact the SEAONC Office at [seaonc@ix.netcom.com](mailto:seaonc@ix.netcom.com) or 415/974-5147.

**upcoming events**

**JAN**

7 San Francisco Dinner Meeting

21 YMF Committee Meeting

22 Business Forum Luncheon

**FEB**

3 Small Business Group Meeting

4 San Francisco Dinner Meeting

25 South Bay Dinner Meeting

**MAR**

12,19 SEAONC Spring Seminar

**Registration**

**Structural Engineers Association of Northern California  
JANUARY 7TH SEAONC DINNER PROGRAM, SAN FRANCISCO CITY CLUB**

5:45 PM  
General Assembly

6:30 PM  
Dinner

7:30 PM  
Program

Location:  
**The City Club**  
**155 Sansome Street**  
**10th Floor**  
**San Francisco**

**BART:**  
**Montgomery Street**  
**Exit**  
**San Francisco**

If no label is shown above, or for guests, please fill in the form below.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

**RSVP by fax to: 415/764-4915** or phone: 415/974-5147  
Make check payable to **SEAONC** and bring with you to the door.

**Deadline for pre-registration: 12 noon, Friday, January 3, 2003**  
Dinner and program reservations are limited. Register early! No cancellations after 12 noon, Friday, January 3, 2003. *No-shows will be invoiced. Tickets not claimed by 6:45 p.m. on the night of the event are subject to being sold. Note: Individuals with outstanding monthly meeting balances are required to pay in advance for a meeting reservation and pay all outstanding monthly meeting invoices.*

<b>COST:</b>	<b>PRE-REGISTERED</b>	<b>LATE REGISTRATION</b>
SEAONC Member	<input type="checkbox"/> \$34	<input type="checkbox"/> \$39
Junior Mbr (29 and under)	<input type="checkbox"/> \$28	<input type="checkbox"/> \$33
Non-Member	<input type="checkbox"/> \$39	<input type="checkbox"/> \$44
Student	<input type="checkbox"/> \$15	<input type="checkbox"/> \$15

← **NOTE: New prices, and new age for Junior Member**