

March 9th Program

Architect and Structural Engineers Role in Sustainable Design

Sharon Gallant, Associate of Degenkolb Engineers, Chuck Davis, Principal, and Scott Shell, Senior Associate of Esherick Homsey Dodge & Davis will be the speakers at the program.

Hamid Fatehi, Program Committee Chair

Green building design has been a growing movement in the United States over the past ten years. It has become a requirement of many owners, especially for government and public education buildings, and is a key factor in who they select for their design team. Architects and their consultants are being required to design buildings that meet a certain level of sustainability, with the most commonly used criteria being that of the LEED rating system, developed by the United States Green Building Council.

The goal of sustainable design is to have a minimal impact on the natural environment while providing a healthy workplace for occupants. This requires a high level of collaboration within the design team with each consultant being a knowledgeable and invested participant from concepts through construction. This month's presentation will provide an overview of sustainable design with an emphasis on the role of Architect and Structural Engineer.

Sharon Gallant, an Associate with Degenkolb Engineers, will present the Structural Engineers role in sustainable design. A general discussion of how an engineer's responsibilities broaden to both researcher and designer with the ability to be innovative a key component. The use of traditional building materials, wood, concrete and steel, is still the norm for most green building construction, so understand-

ing the attributes of each is expected. She will share some of the work Degenkolb has been doing to evaluate material use and present concepts for the use new technologies to gain material efficiency.

Chuck Davis, Principal, and Scott Shell, Senior Associate of Esherick Homsey Dodge & Davis, will present case studies to illustrate specific sustainable design solutions, along with some background on the larger issues driving green building. Much of the emphasis in green building circles has been on energy efficiency, site design, and indoor air quality. While discussions of materials have generally focused on interior finishes, they will make the case that the vast majority of material quantities and associated environmental impacts are due to structural materials. They believe that a collaborative effort is needed to identify and quantify these impacts, and then to find sustainable solutions to significantly reduce them.



Environmental Technology Center at Sonoma State University; Architect George Beeler of AIM Associates & Structural Engineer, Degenkolb



Global Ecology Building & Architect EHDD

A Message from the President

Our Careers in Structural Engineering

In January there were two articles in the *San Francisco Chronicle* related to the changing business practices in California and the U.S. due to the forces of the global economy. I believe these are of interest to us as practicing engineers. The first, on January 8th reported on a news conference in Washington in which two Silicon Valley chief executives reacted to criticism that they've shipped too many high tech jobs overseas. According to the article, Carly Fiorina, HP CEO, and Craig Barrett, Intel CEO, defended their company's practices of hiring workers in China and India and warned that the U.S. and particularly California were losing their competitive edge to the Far East. Barrett noted that the world had arrived at a "strategic inflection point" where nearly half of its population - living in China, India and Russia - had been integrated into the global economy. He said many of them are highly educated workers "who can do just about any job in the world." Fiorina stated that "there is no job that is America's God-given right anymore."

Continued on page 2

Meeting Notice

Tuesday, March 9th, 2004

| | |
|----------|------|
| Assembly | 5:45 |
| Dinner | 6:30 |
| Program | 7:30 |

City Club, San Francisco

155 Sansome Street, 10th Floor

Fax registration form on the back of this newsletter to the SEAONC office by 12 noon Friday, March 5th, 2004

FAX: 415-764-4915

Continued from page 1

This was followed by an article on January 20th reporting on a plan by IBM to shift several thousand high-paying programming jobs overseas. According to that report a programmer in China with three to five years experience would cost IBM about \$12.50 per hour, including salary and benefits. That is less than one-fourth of the \$56 per hour cost of a comparable U.S. employee, also including salary and benefits.

Under the assumption that practices in the high tech industry tend to run a few years ahead of our practices in the engineering/design profession, what does the future hold for structural engineering careers in the U.S.? If shifting jobs overseas makes sense in the high tech industry it must also make sense, at least to some degree, in structural engineering (and of course in most other branches of engineering).

It can certainly be argued that many design professional services cannot be shipped overseas. Services involving field investigations and face-to-face communication related to existing construction must be handled locally. Furthermore, the age-old wisdom that clients hire individuals more than they hire firms still applies. There will always be a need for clear speaking engineers and architects to communicate ideas and solve problems at the local level.

On the other hand many of the services we provide can as easily be done overseas as in an office in the Bay Area. The large engineering/construction companies have already discovered this. Tasks that involve considerable labor from individuals sitting in office cubicles are as easily done in a cubicle in China as one in San Francisco. Obvious candidates for outsourcing are CAD drafting (which is already headed overseas), computer analysis using standard software, and design and detailing based on that analysis. It would seem that analysis, design and drafting for new construction would be more easily moved overseas than that related to renovations, but generally any task that involves work at a computer station can be done at a remote station. The national consensus guidelines we've developed for our structural and earthquake engineering practice can also be understood and utilized by well-educated en-

gineers in many other countries. The computer software we've developed to facilitate our analysis and design is quite easily exported or copied.

Furthermore, consider *where* the demand for engineering services will be. Until the last decade, millions of square feet of manufacturing facilities were being built each year in Silicon Valley. The same companies are now phasing out those operations as they become out-dated and building new ones in China or elsewhere. (Even the major Taiwanese manufacturers are building many of their new plants in China.) So the demand for design services is also shifting to foreign lands. Obviously not many of those facilities will be designed in the U.S. as long as highly educated engineers are available at a fraction of the price right at home.

Some politicians are calling for retaliation against corporations and some are considering trade restrictions. However, the insight offered by Carly Fiorina and Craig Barrett, as they were defending their company's policies, is interesting. The *Chronicle* quote of Fiorina is as follows: "It's interesting to me that so many people talk about China or India or Russia as being a source of low-cost labor. Truthfully, over the long term, the greater threat is the source of well-educated labor. And if you look at the number of college-educated students that China graduates each year, it's close to 40 million. The law of large numbers is fairly compelling."

They called for a doubling of federal spending on basic research in U.S. universities and for improvements in K-12 education, saying that schools tend to block budding math and science students rather than to foster them. They insisted that protectionism would fail, comparing the situation to the threat from Japan in the 1980's. At that time, they noted, the U.S. went through a painful restructuring, while Germany and France resorted to protection. We ultimately prospered, while they fell behind.

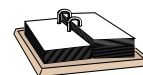
This is a trend that is more powerful than SEAONC, SEAOC or any other engineering association. Nevertheless we should be aware of it since, unless we're close to retirement, it will affect us. As engineers we probably need to think more like consultants than implementers of routine de-

sign. Organizations like SEAONC can help us to prepare. Also, of course, we can continue to do our part, through efforts like Student Impact, to help the next generation of engineers prepare for the twenty first century. If you have ideas related to this issue, the Newsletter would welcome them.

- David Bonneville, President



CALENDAR OF EVENTS



March 8

DES Committee Meeting
KPFF Conf. Room, San Francisco

March 9

San Francisco Dinner Meeting
City Club, San Francisco

March 11

Business Forum Luncheon
The Washington Inn, Oakland

March 24 & 31

2004 Spring Seminar
Post-Tensioned Concrete Design & Construction
PGE Auditorium
San Francisco

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SEAOC DISASTER EMERGENCY SERVICES

SEAOC Volunteers Respond to the San Simeon Earthquake

by Raymond Lui, Committee Chair & Jeff Falero, SEAONC DES Vice Chair

SEAOC Volunteer Safety Assessment Engineers were dispatched to the California's Central Coast following the December 22, 2003 San Simeon Earthquake (M6.5) to assist the local jurisdictions in their evaluation of earthquake damaged buildings.

On December 23 and 24, SEAOC was asked by the State of California Office of Emergency Services (OES) to provide volunteer engineers to the cities of Atascadero, Paso Robles, and Guadalupe. Responding to the area on December 26 were Cliff Craig (Atascadero); Ed Rivera, Josh Kardon, Ron Hamburger, Jeff Falero, and Karin Kuffel (Paso Robles); Carl Josephson, and Nestor Agbayani (Guadalupe). On December 30, John Meyer responded to Paso Robles' need for additional volunteers.

Although the original assignments were expected to last 3 days, these volunteers were able to complete their work within a day or two. Nice work and thank you.

Finding available volunteers was a difficult task to carry out, especially during the holidays. Thanks to the members of the phone tree who made it happen.

Upcoming Structural Assessment Program (SAP) Training

The DES Committee is pleased to announce its plans to hold the next Structural Assessment Program (ATC-20) training at the Presidio of San Francisco on Sunday, May 2, 2004.

If you are interested in becoming a volunteer to help evaluate buildings after an earthquake like those who recently responded to the Central Coast, or would like to brush-up on what you have learned in the past, this will be a great opportunity to learn about the upgraded Structural Assessment Program. We have a great list of speakers, terrific food and nice facilities planned for the training.

Also, if you are currently on the phone tree and did not get a chance to attend any of the sessions held last year, your Disaster Service Worker (DSW) card has expired. You will need to attend the SAP training to obtain a new DSW card.

Look for a seminar announcement and registration form in the April newsletter.

If you are interested in helping the committee organize this event, it's never too late to get involved! Feel free to contact Jeff Falero (jeff@gfdseng.com) or simply show up at our next meeting. We will meet on Monday, March 8 at 5:30 PM at the KPFF Conference Room in San Francisco. We hope to see you then.

Advertisement

**2004 Structural Engineering Review Workshops
Based on the 2001 CBC and 2000 IBC
www.structuralsolutions.com**

Following 3 successful years of offering the most comprehensive SE review workshops, we are pleased to announce the 2004 program for May through October of this year in the Bay area. The California Board of Registration for Professional Engineers has tentatively decided to reformat the exam this year and the first day of the exam will be based on NCEES Structure II exam. The significance of this change is that it will be based on the **2000 IBC**. Never before has the need for a comprehensive program instructed by professional who have been involved in development of both codes been greater. Don't risk going at this alone or with a less comprehensive program. See next month's newsletter or the web site above for more details and a registration form.

Business Forum
Simin Naaseh
415/837-0700
simin@forell.com

Bylaws
J.E. Goudie
925/933-5876

Computer Applications
(TBD)

Construction Quality Assurance
Art Dell
415/989-9900
adell@soha.com

Continuing Education
Troy Morgan
415/837-0700
troy@forell.com

Disaster Emergency Services
Joe Zsutty
408/298-9018
jzsutty@aol.com

Existing Buildings
David Bonowitz
415/771-3227
dbonowitz@mindspring.com

Legislative
David Wilson
415/834-2010
dwilson@cdengineers.com

Professional Practices
Douglas Hohbach
650/617-5930
dhohbach@hohbach-lewin.com

Program
Hamid Fatehi
415/957-9445
hamid.fatehi@arup.com

Pat Chow (South Bay)
650/428-2860
patchow@rpse.com

Public Affairs & Membership
Derrick Roorda
415/398-5740
droorda@de-simone.com

Public Relations
Carrie Bischoff
415/392-6952
cbischoff@degenkolb.com

Seismology & Structural Standards
Gary Mochizuki
925/938-3303
gary@structsol.com

Website
Darrick Hom
510/272-9040
dbhom@comcast.net

Young Members Forum
Ali Afrasiabi
650/494-1600
aafraziabi@umerani.com

Call for Volunteers

2004 Student Impact Project

Join your fellow engineers and make a direct impact in local high schools by teaching basic structural engineering principles through the context of a model bridge design.

For more information or to obtain a sign-up form, please call Kate Stillwell at (415) 354-6434 or e-mail: kstillwell@degenkolb.com.

Thank you to the following members and firms who contributed to the SEAONC Scholarship Fund since last month:

\$51 - 150

Walter Hensolt



Make a contribution this year when renewing your membership and join this prestigious list!

New Members

Member

Jiyoung Lee

Engineer, Nabih Youssef & Associates

Kevin Zucco

Associate, ZFA Structural Engineers

Associate

Gregory Cashen

Engineering Project Manager, DCC Engineering

Derek Johnson

Structural Engineer, The Crosby Group

Manuel Rivas

Assistant Civil Engineer, County of Santa Clara

EXCELLENCE IN STRUCTURAL ENGINEERING COMPETITION 2004

**Deadline for Entries is:
Friday, March 26, 2004 by 1:00 p.m.**

**Entry Applications are available on the
SEAONC website at:
http://www.seaonc.org/pdfs/2004Excel_Eng.pdf**



Posting for Membership

Member

Ben Au

Project Manager, Holmes Culley
Shedly Seaman
Engineer, Seamark Engineering

Associate

Allison Johnson-Moore

Engineer, Middlebrook + Louie

Affiliate

Stephen Tobriner

Professor, University of California

Student

Khanh Chau

Graduate Student, Santa Clara
University

Christopher Durkin

Graduate Student, Cornell
University

David Kane

Masters Student, UC Davis

Lukki Lam

Graduate Student, University of
California, Berkeley

Christopher Pumo

Graduate Student, Stanford
University



Bulletin Board

Dear SEAONC members,

Every year, the Civil Engineering Students at San Jose State University participate in the Concrete Canoe Competition. The challenge is creating a concrete mix that will float and be able to hold weights of paddlers and resist water waves. This type of activity will allow us the best opportunity to experience working as a team and apply all of our civil engineering knowledge into a real design project. However, we will not be able to start the building process until we get enough fundings to help us in purchasing lab equipment and concrete materials.

Please contact the SJSU Canoe Project Manager., Christine Mohanna at (408) 410-1645 for more information.

Carlos Chang, SE and **Edward Qi, PhD, SE** were recently welcomed into leadership roles at **Middlebrook + Louie**, as Associate Principals. In addition, **Vivian Wan, PE**, was made an Associate of the firm.

Degenkolb Engineers of San Francisco promoted **Carrie Bischoff** and **Roger Parra** to Associate. Bischoff is currently working on the UCSB Francisco Torres seismic corrections and renovations, UCSF SB 1953 compliance projects, and the St. Luke's Hospital expansion and renovation. Parra is providing value engineering and structural design services for Ghirardelli Chocolate Company, Hewlett-Packard Company, and the Hoover Pavilion Stanford Medical Center. With more than 65 years of experience, Degenkolb Engineers is a full-service structural engineering firm committed to earthquake safety worldwide and innovative structural engineering.

Ralph Morgan, SE – 1938-2004

SEAONC lost a committed, long-time member when Ralph Morgan passed away January 16, 2004. Mr. Morgan was well known for both his design skills and a benevolent nature in his hometown of Modesto where he spent nearly a half-century. He joined SEAONC in 1966 and participated actively for 38 years, attending the San Francisco Monthly Dinner Meeting as recently as December.

Mr. Morgan graduated from the University of California at Berkeley with an engineering degree in 1962. In 1968 he opened his own engineering and architectural firm that eventually became known as Ralph Morgan & Associates. Mr. Morgan was a member of multiple community causes including being a life member of the Salvation Army Advisory Board. The Salvation Army building in downtown Modesto and the Red Shield Community Center in south Modesto are among his legacy design projects.

Business Forum

SEAONC BUSINESS FORUM MARCH MEETING

How is Catholic Healthcare West meeting their facilities needs?

Thursday, March 11, 2004

12:00 pm – 1:30 pm

New Location: The Washington Inn
495 Tenth Street, Oakland

Near 12th Street/City Center BART Station

We are very pleased to have Mr. Jeff Land of Catholic Healthcare West join us as the speaker for our March meeting. Jeff Land serves as Vice President for Corporate Real Estate at Catholic Healthcare West (CHW). CHW is the largest not-for-profit healthcare provider in California, with over 14M square feet of medically related space accommodating over 7,000 acute care beds and 36,000 employees located on 41 hospital campuses in California, Nevada, and Arizona.

Mr. Land is responsible for providing leadership in the areas of Strategic Positioning, Acquisition, Disposition, Joint Ventures, Property Management, Energy Management, Master Planning, and Capital Construction Project Delivery for CHW's \$3+Billion portfolio. He has over 25 years of real estate operations, brokerage, construction, and performance improvement experience.

Mr. Land will discuss CHW's plans for development in the near and distant future, and the opportunities and challenges that they face in their projects, including lessons learned from past projects. He will discuss the status of CHW's compliance with SB1953. He will also talk to us about their approach to selection of A&E design teams as well as construction managers and contractors.

This is a great opportunity to meet a key player in the healthcare arena and to learn about upcoming opportunities. Please share this announcement with your colleagues who may be interested in this topic.

Cost: \$25 for Business Forum Members
\$35 for SEAOC Members
\$40 for Other Attendees

Meal Selections: Seared Steak Sandwich, Crab Cake Sandwich or Fettuccini Primavera

RSVP: Contact the SEAONC office at:
seaonc@ix.netcom.com or 415/974-5147

Registration Deadline is Tuesday, March 9th, at 12:00 p.m.

Space is limited so register early!



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). 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

Tipping Mar & Associates is an award winning structural engineering firm. We have an enthusiastic staff of 17 who work collaboratively. Our approach is innovative, and our projects are diverse. We are seeking a bright, creative, self-motivated individual for a challenging position as a structural engineer. Please send your resume with a cover letter to Tipping Mar & Associates, 1906 Shattuck Ave, Berkeley, CA 94704, fax to 510-549-1912, or e-mail to steve@tippingmar.com

SOHA Engineers has openings:

-Project Engineer with 4-7+ yrs exp. In structural/seismic analysis and design of buildings. CE license. Must have good technical skills, able to work fairly independently, team player with interest in working in a collaborative and technically challenging environment.

-Project Manager/Principal Structural Engineer, 10-15+ yrs exp. SE license. Must have excellent technical, verbal and written communication skills. SOHA offers stability, diversity of projects, and career growth opportunities.

Please send resume with cover letter to: SOHA Engineers
c/o Human Resources, 550 Kearny Street, Suite 200, San Francisco, CA 94108 or Fax 415-989-9909.

DeSimone Consulting Engineers, a leading national structural engineering firm, has an immediate opening in our growing San Francisco office for a bright, creative, self-motivated engineer with strong technical and management skills. The ideal candidate should have 2-5 years experience in new design and seismic rehabilitation, as well as excellent communication skills and a PE (preferred). We offer a very competitive benefits package, coupled with a fun and dynamic work environment. Fax your resume to 415/398-9834 or e-mail: rpolvka@de-simone.com.

Precision Structural Engineering, Inc. is looking for a self motivated, hard working Civil/Structural Engineer with a minimum of 5 years experience to manage the company branch in Medford, OR. Profit Sharing, Bonuses plus other benefits for the successful candidate. Please visit www.structure1.com for information or call 541-850-6300 for more details.

TranSystems Corporation is an award winning and reputable transportation engineering firm with offices in Tucson, Arizona. We need a Civil/Structural engineer to lead our Bridge Engineering staff in Tucson. Our projects include the design of Highway, Railroad, Pedestrian and other Bridges, mostly in Arizona. Building experience a plus. Must be Registered Structural Engineer in California, with a minimum of 10 years experience. Relocation assistance, competitive salaries and excellent benefits. Send your resume to 406 S. Fourth Avenue, Tucson, AZ 85701, Attn: Jerry Cannon
Email: jacannon@transystems.com
Phone: 520-792-2200

MIDDLEBROOK + LOUIE is seeking structural design engineers with 0-4 years experience on major Type I and Type II buildings. Successful candidates will have an MS degree with a structural emphasis, excellent verbal/written abilities and strong computer skills. A CE license is a plus. These permanent positions offer good earnings potential, an excellent benefits package, stimulating projects and a cooperative, professional work environment. Resumes can be mailed to the attention of Jason Louie

at One Bush Street, Suite 250, San Francisco, CA 94104 / faxed to 415-477-9099 / ore-mailed to employment@MplusL.com. More information about our award-winning firm is at www.MplusL.com.

PARADIGM Structural Engineers, Inc. is growing. Opportunities for Staff Engineers, Project Engineers, & Senior Project Engineers are available. Come join a team of professionals dedicated to professional development, client satisfaction and upward mobility. If you are seeking a challenging position which fosters growth and allows you to develop to your full potential, come see us at www.paradigmse.com

Rutherford & Chekene an award winning multi-disciplinary consulting engineering firm is seeking an experienced **geotechnical engineer** to supplement its expanding geotechnical department. This is a unique opportunity for a person who has a strong interest in foundation engineering and the relationship of foundation/structure interaction to building performance. R&C's unique approach involves continuous interaction between the geotechnical, civil, and structural engineering staff to arrive at innovative and cost-effective solutions to the design of foundation, shoring, and underpinning systems.

Candidates for this position should have a PE license and 5-10 years of experience in geotechnical engineering with emphasis on foundations for buildings and other structures. A GE license would be a plus. This position offers an opportunity for rapid advancement to associate or higher status for a proven individual. We offer competitive salaries and an outstanding benefit package, including 401k and annual profit-sharing bonuses.

Interested parties should send their resume to Rutherford & Chekene, 427 13th St., Oakland, CA 94612, attention Gyimah Kasali, or fax to (510) 740-3340, or email to gkasali@ruthchek.com.

NISHKIAN MENNINGER SEEKS EXPERIENCED REGISTERED ENGINEER with 5 or more years experience in various

types of structures; office buildings, high-rises, schools, multiple-tenant residential & other commercial projects, garages and seismic rehab. Resume & salary requirements to: 1095 Folsom Street, San Francisco, CA 94103 or e-mail: nishkian@nishkian.com.

Senior Structural and Civil Engineer: Creegan + D'Angelo Consulting Civil and Structural Engineers, [C+D], seeks a senior registered engineer. Experience should include Project Manager/Engineer for bridges, seismic retrofit, and FEMA 273, 274 & 310 building assessments and retrofit construction plans and specifications. The company has five Bay Area offices that provide engineering services for land development, water, transportation, building, and seismic projects. The position will require communication with clients, structural analysis and engineering, and managing project engineering and budgets to produce final reports, plans, specifications, estimates, and calculations. Send resume to D. Wilson, C+D Consulting Engineers, 170 Columbus Avenue, Suite 240, San Francisco, California 94133 or email dwilson@cdengineers.com.

Senior Project Manager KPFF Consulting Engineers seeks Senior Project Manager w/a minimum of 10 years experience and SE license. Master's degree and healthcare experience preferred. Applicant must be motivated and possess excellent technical, written and verbal communication skills. We offer excellent career growth opportunities with a competitive salary & benefits package. Send resume to: Office Manager, KPFF Consulting Engineers, 1160 Battery, Suite 300, SF, CA 94111. EOE

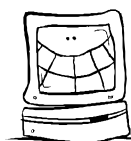
CAD OPERATOR KPFF Consulting Engineers seeks CAD Operator proficient with AUTOCAD 2000. Minimum 3 years structural drafting experience required. Send resume and salary history to: KPFF Consulting Engineers, 1160 Battery Street, Suite 300, San Francisco, CA 94111. NO PHONE CALLS or WALK-INS. EOE.

Umerani Associates, structural engineering firm located in Palo Alto, specialized in Civic, Educational & Healthcare facilities, is seeking self-motivated engineers with strong technical & management skills. Min. 3 years of experience is required. Firm is also seeking experienced CAD drafts-persons. Contact: Jawed Umerani, 4020 Fabian Way, Suite 302, Palo Alto, CA 94303; Fax: (650) 494-1601 or contact@umerani.com

Degenkolb Engineers has opportunities in our Oakland office for Project Engineers to join our creative, enthusiastic, motivated team. Recognized leaders in seismic engineering, our firm offers a diverse, challenging mix of projects on both new and existing structures. Our firm growth is rooted in the career development of our engineers to leadership positions. Our benefits package is unsurpassed in the industry. Minimum requirements are MSSE, California P.E. registration, five years of experience in structural engineering with an emphasis in seismic design and analysis, excellent communication skills, and a desire to work in a challenging, collaborative environment. For more information, visit our web site at www.degenkolb.com. Cover letter, resume and references should be sent to Degenkolb Engineers, The Rotunda, 300 Frank H. Ogawa Plaza, #450, Oakland, CA 94612-2047. EOE

**April 2004 News
deadline:
Wednesday, March 10th**

Submit your articles by
e-mail to:
SEAONC@ix.netcom.com



DISPLAY ADS

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| | |
|----------------|-------------------|
| 1 sided | \$1000/mo. |
| 2 sided | \$1200/mo. |

Rates are for finished camera-ready black and white ads or proofed PDF files with embedded fonts. *Full payment is required at time of insertion order.* For advertising contract, size specifications, and special rates for running an ad for multiple months, contact the SEAONC Office at by e-mail at seaonc@ix.netcom.com or phone at 415/974 -5147.

Job Forum Insertion Fees:

\$150 for up to 450
characters/spaces

\$15 for each 45
characters/spaces
thereafter

All job forum ads will
also be posted on the
SEAONC web site.



Rebuilding Together Still Needs Contributions!

Rebuilding Together 2004 is rapidly approaching! This year, we are expanding our efforts to Rebuilding Together's "Institutional" category, which includes projects such as homeless shelters, battered women's shelters, and under-funded schools. THANK YOU to everyone who responded to our February requests for contributions! The contributions will be used to purchase tools and materials for the project we will be working on this year. We still need contributions to reach our goal of \$7,500 so that we can again provide this very worthwhile service to the community. If you would like to make a donation, please send a check, payable to Rebuilding Together, to the address below. For more information about Rebuilding Together, visit <http://www.rebuildingtogethersf.org> or contact Joyce Feng at Degenkolb Engineers (510-272-9040 or jfeng@degenkolb.com).

Send all donations to: Rebuilding Together c/o Joyce Feng
Degenkolb Engineers
300 Frank H. Ogawa Plaza, Suite 450
Oakland, California 94612

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The New de Young Museum

Anita Chu, Program Committee

The February meeting featured a presentation by Bret Lizundia, S.E., on Rutherford and Chekene's work on the New De Young Museum currently under construction at Golden Gate Park. Mr. Lizundia talked about the architectural concepts that led to this striking building and the challenges they created for the engineers. The primary architectural designer is Herzog and de Meuron, and the architect of record is Fong and Chan.

The replacement program for the old De Young, which was declared seismically deficient, included demolition of the existing building and creation of two new structures: a 3 story 258,000 sq ft. main building and a 10 story 33,000 sq ft. education tower. Extensive landscape work was also part of the program, as one of the primary architectural goals for the new De Young was to fully integrate the museum into the Golden Gate Park landscape.

The main building, which serves as the primary museum space, is base isolated on a system of high damping rubber bearings, special flat sliding bearings, and fluid viscous dampers, which in turn rests on top of a grid of grade beams. The superstructure is composed of OCBF's above shear walls in the basement. R&C investigated numerous options with 7 site records and 5 actual near field records, and came up with this solution, as it required the fewest dampers at the lowest cost, and provided stable isolation in the MCE.

Mr. Lizundia described how the design of the main structure embodied the objective of merging the outside park with the museum interior. The façade is made of copper panels in a variety of hues to mimic the striations of light and shadow caused by sunlight passing through leaves. Numerous entrances, courtyards, and skylights were put in the building to maintain a connection to the outdoors. The roof of the building also curves and undulates to simulate the Golden Gate Park sand dunes and the forest canopy.

Another driving concept for the building is unification of diversity; this is represented by making the building three separate wings connected under one roof. The challenge of designing a roof diaphragm to connect three wings was augmented by the necessity of open spaces for galleries, atria, and courtyards, and restrictions on the placement of the braced frames, all of which led to very short spans of diaphragm being forced to transfer high forces. Solutions to this problem included detailing of steel plates to link girders on both sides of the chord and additional steel reinforcing in the slab.

Other design challenges R&C faced included long span trusses inside the wings, a 62-foot long roof overhang on one side of the building, and design of a moat cover that would allow the park to come directly up to the building without a visible gap or creation of a step.

The education tower was not base isolated but presented its own challenge: the tower rotates 30 degrees as it rises above the main building. The rotated architecture also led to the walls tilting, in plane, over 16 degrees from the vertical. The architects experimented with various floor layouts and shapes and ended with a series of rectangular floor plans that became parallelograms at the upper stories. The first four floors were a solid "torsion box" of shear walls, and as the tower continues up and begins to rotate, the walls begin to step back and break away. The upper floors have girders running longitudinally and shear walls on the other ends. In order to reduce deflection of the tower and to counteract ratcheting caused by earthquake forces, the end walls are post-tensioned with the tendons running vertically. The tendons were placed at an angle to reflect the distribution of forces and the deflections caused by the geometry of the building, which was studied by both pushover and nonlinear time history analyses. The rest of the tower structure consists of two elevator cores connected by coupling beams that sat on a 6-foot mat.

In conclusion, Mr. Lizundia and R&C have successfully met some unique structural challenges while working to maintain the architectural vision for this significant new building. Thanks to Mr. Lizundia for his fascinating presentation.

upcoming events

MARCH

- 8 DES Committee Meeting
KPF Conference Room, San Francisco
- 9 San Francisco Dinner Meeting
City Club, San Francisco
- 11 Business Forum Luncheon
The Washington Inn, Oakland
- 24 & 31 2004 Spring Seminar
Post-Tensioned Concrete Design & Construction
PGE Auditorium, San Francisco

Registration

Structural Engineers Association of Northern California
March 9th SEAONC DINNER PROGRAM, San Francisco, City Club

5:45 pm
General Assembly

6:30 pm
Dinner

7:30 pm
Program

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

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

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

RSVP by Fax: 415/ 764-4915, e-mail: seaonc@ix.netcom.com, Phone: 415/974-5147

Deadline for pre-registration: 12 noon, *Friday*, March 5th, 2004
Make check payable to SEAONC and bring with you to the door.

BART:
 Montgomery St. Station,
 exit on Sansome Street

Register early! Dinner and program reservations are limited. No cancellations after 12 noon, *Friday*, March 5th, 2004. 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.

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|---------------------------|-------------------------------|----------------------------------|
| COST: | PRE-REGISTERED | LATE REGISTERED (After Deadline) |
| 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 |