(FOUNDED 1930)

VOL. LVII, NO. 9 74 NEW MONTGOMERY STREET, SUITE 230 SAN FRANCISCO, CA 94105-3411 415/974-5147 SEPTEMBER 2002

A Message from the President

2002 SEAOC Convention

by Steven B. Tipping, SEAONC President

I want to take this space and give a special plug for the upcoming SEAOC annual convention. This year's event will be held in beautiful Santa Barbara, from September 25 to 29 at Fess Parker's Double Tree Resort. The Southern California section's team, headed by Chairman Douglas Thompson, has put together what promises to be an outstanding event. In the area of pure fun, the convention committee has organized a broad range of social activities. From an outreach point of view, there will be special First-Timer's Reception where new comers to the event can meet SEAOC presidents and SEAOSC committee chairs. Also, there will be a Younger Engineer's Award Program. Welcome in advance to all new faces.

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Meeting Notice

September Dinner Meeting
September 10th, 2002

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, September 6th.**

NOTE: New dinner prices, and new age for Jr. Mbrs. started last month (see back for details).

September 10th Dinner Meeting Program, San Francisco City Club

DRIVEN PILE FOUNDATION DESIGN AND CONSTRUCTION AT UCSF MISSION BAY GENENTECH HALL USING ULTIMATE SOIL AND PILE CAPACITIES

Donald W. Quigley, Harding ESE, Inc. and Jamison Curry, Rutherford & Chekene

by Jamison Curry, Program Chair

Our September Program will present a case study of pile foundation design and construction. Our speakers will be Donald W. Quigley of Harding ESE, Incorporated, the project's geotechnical engineer, and Jamison Curry of Rutherford & Chekene, the project's structural engineer.

Driven 14-inch-square concrete piles were used as the foundations of Genentech Hall at the new University of California, San Francisco Mission Bay Campus. The five-story, steel eccentrically-braced frame building is currently nearing completion at a 43-acre property located in a former large shallow marshy inlet of San Francisco Bay. The piles were driven through 10 to 25 feet of fill and 20 to 60 feet of soft compressible Bay Mud into an underlying dense sand layer.

Pile design capacities were developed for (1) traditional allowable stress design; (2)

Continued on page 8

Ram International
Repeat Full Page Ad

City of San Francisco Board of Supervisors Proposes Business Tax Increase

by Reinhard Ludke, S.E. , and David Wilson, P.E.,
Business Forum Chair and Legislative Committee Chair

Supervisor Jake McGoldrick proposed to restructure the City Tax Code and increase the tax basis for firms with offices in San Francisco. The SEAONC Business Forum sent the following letter to each Supervisor and Mayor Brown on September 2, 2002.

On Tuesday August 6, the day after the usual Monday Board of Supervisors meeting, the San Franciso Chronicle published an article that stated that Supervisor Jake McGoldrick tabled his proposed bill, before it was presented to the Board. In this bill, he had proposed to increase the city's gross sales receipts tax and payroll taxes. The Board's Finance Committee did not take a position on this measure before forwarding the measure to the full Board. The Chronicle article also stated that many people in the business community opposed the bill. The Board was expected to vote on whether to place this measure on the November ballot, but for now, it appears that the McGoldrick measure is dead.

We know that AIA, the San Francisco Chamber of Commerce, and other San Francisco Businesses communicated their opposition to this measure. To us, it demonstrates that politicians do pay attention, if you let them know your position and give them your opinion about proposals that will affect you, employees and your business.

SUBJECT:
City of San Francisco – Board of Supervisors
New Business Tax Measure

Dear Mr. Ammiano,

The Structural Engineers Association of Northern California - Business Forum members are structural engineering firms. The Business Forum provides members business operation and practice education and a forum to discuss a wide range of business issues. The Forum includes many new smaller San Francisco firms and the larger nationally recognized leading structural and earthquake engineering firms that have been in San Francisco over 50 years. The economy in California has reduced some firms business volume over thirty percent. We have no way to predict when and if we will return to the 1995 – 2000 level of business.

Our members employ over 1000 people in San Francisco offices that are administrative assistants, technicians, scientists, graphic artists, marketing, and engineers. We have culturally diverse staffs, women and men, gay and straight.

The office rental rate increases in 1998 – 2001 has all ready driven many small and large engineering firms to Oakland. We are businesses that work very hard to remain profitable and maintain a healthy business for our employees and owners. We are trying to keep all our employees and avoid lay offs during this recession. The proposed new increased City Tax will add to our costs and create an additional financial hardship. It could lead to laid off employees and force us to move our business to another city.

We request that you oppose this measure and support employment and benefits for our workers. We reduce our expenses and control costs during the recession. We ask that the City do the same thing private owned business have to do, reduce costs, rather than raise taxes on small business and have more people lose jobs. The net effect could be more empty buildings, and less City income, as we are forced to move.

August 6th Program Wrap-up – City Club, San Francisco

STRUCTURAL IMPLICATIONS OF EXPLOSIVE ATTACK

Hollice F. Stone and Lorraine Lin of Hinman Consulting Engineers, Inc.

by Jamison Curry, Program Committee Chair

SEAONC thanks Hollice Stone and Lorraine Lin, our August speakers. They made an interesting presentation about one of the main services provided by Hinman Consulting Engineers, Inc. - design to mitigate the effects of blast.

The presentation began by characterizing the effects of blast loading on a structure and drawing some comparisons and contrasts between blast loading and seismic loading.

Blast loading is characterized by *very* high forces acting over very short periods of time. Significant events in recent history have had charges involved that are equivalent to 1,200 to 12,000 pounds pounds of TNT. For instance, the charge used in the 1983 bombing of the United States Embassy in Beirut, a seminal event in blast design history, was equivalent to 12,000 pounds of TNT. This event made clear the importance of considering terrorist blast attack on buildings and resulted in standards for federal building design.

Another characteristic of blast effects is that peak pressures generated diminish rapidly with distance from the explosion. For a 4000-pound TNT charge (equivalent to the charge used in the attack on the A.P. Murrah Federal Building in Oklahoma), at a stand-off distance of 5 feet the peak pressure generated is

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Committees on Assignment

BUSINESS FORUM SEPTEMBER PROGRAM:

A Status Report

SB1953 Hospital Seismic Performance

Can Hospitals Meet the Goal?

Date: September 18, 2002
Time: 12:00 – 1:30 p.m., Lunch/Program
Place: City Club,
155 Sansome Street
San Francisco, California
Speakers:
Mr. Roger Richter
Sr. Vice President
California Healthcare Association
Mr. Robert Eisenman
Kaiser Healthcare System
Mr. Ken Anderson, CEO
John Muir/Mt. Diablo Medical Center
Meal Choice: Chicken, Beef, or Pasta

Hospitals in California submitted over 400 Seismic Evaluation Reports and SB1953 Compliance Plans to OSHPD before January 1, 2001. OSHPD continues to review and reject many of these plans. The long term dilemma for the hospitals remains, get non-complying critical care buildings retrofitted, replaced, or taken out of service before the 2008 deadline.

The speakers will give you a status report on the SB 1953 program. There are a large variety of California healthcare providers that include publicly supported hospitals, small private rural hospitals, large privately owned hospital groups and the Kaiser Healthcare System, with 6,300,000 members and 28 California Hospitals. Retrofit, remove or replace? Find out what we are doing. How is OSHPD working with the healthcare industry, structural engineers and architects to satisfy the public safety and schedule specified in this legislation? How much is this all going to cost and how will we pay for this improvement to hospital seismic performance?

Make reservations by calling the SEAONC office (415-974-5147) by noon, Monday September 16, 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 6+ employees and only $75 for 5 employees or less. 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.

Committee Chairs

Business Forum
Reinhard Ludke
415/834-2010 Ext 3003
rludke@cdengineers.com

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CALBO Issues Guidelines on SMRFs

by Rafael Sabelli, Seismology and Structural Standards Committee Chair

CALBO, the association of California building officials, has issued a series of recommendations to its members concerning the use of steel moment-resisting frames (SMRFs). These recommendations are intended to guide building officials in the use of guidelines which are more up-to-date than the Uniform Building Code, specifically the American Institute of Steel Construction's (AISC) Seismic Provisions and FEMA's publications 350 and 353. They are also intended to give more specific guidance than either of these on the use of SMRFs in light-frame construction.

Seven recommendations are made to building officials:

1. Adopt and enforce the 1997 AISC Seismic Provisions and the latest supplements.

2. For SMRFs, permit use of the reduced beam section (RBS) connection or other connection prequalified in FEMA 350, or test according to Appendix S of AISC Seismic.

3. For Ordinary Moment-Resisting Frames (OMRFs), permit use of FEMA 350 prequalified connections.

4. Limit extrapolation of test results as described in Appendix S of AISC Seismic.

5. Require project-specific testing per Appendix S of AISC Seismic when configurations used vary from the prequalified or tested configuration.

6. Require project-specific specifications including welding procedures, welder qualifications, and quality assurance procedures.

7. Require plan review by a California licensed engineer knowledgeable in SMRF design and construction.

For more information, see the CALBO website (http://www.calbo.org/NewsArticles.asp#article12)

Hohbach-Lewin, Inc. Announces Opening of New San Francisco Branch Office

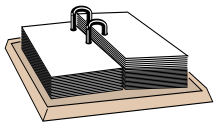
In order to expand and better serve its San Francisco based clientele, and in keeping with one of the central tenets of the firm's mission statement—providing entrepreneurial outlets for firm members—Hohbach-Lewin is pleased to announce that it is now open for business at 116 New Montgomery, Suite 914, San Francisco, 94105. The San Francisco office is managed by SEAONC member and firm Principal, Anthony Lee, S.E. The office initially has opened with a staff of seven engineers and CAD personnel, including SEAONC members Eddie Hui, S.E.; Chris Morton, P.E.; and Winnie Lo.

Hohbach-Lewin is headquartered in Palo Alto and also has a branch office in Eugene, Oregon. The firm was created in 1998 and has steadily grown since its inception to its current staff of 40. Although Hohbach-Lewin primarily provides structural engineering design and consulting services on a divers array of assignments for projects and clients located throughout the San Francisco and South Bay areas, the firm has also provided services for clients located throughout the United States.

Firm Principal Doug Hohbach is the past chair of SEAOC's Seismology Committee and is also currently serving on SEAONC's Board of Directors.

EVENT CALENDAR

September 10th--Dinner Meeting, San Francisco City Club



September 18th--Business Forum Luncheon and Program, San Francisco City Club

September 25th-29th--SEAOC Convention, Fess Parker's Doubletree Resort, Santa Barbara

October 5th--SEAONC ATC Training: Procedures for Postearthquake Safety Evaluations of Buildings, Santa Clara University (for details see flyer in this newsletter)

NEW DINNER MEETING PRICE STRUCTURE

New dinner prices took effect last month. Also, the age to qualify for the Junior Member rate has been changed to 29 and under. Please see back page for details.

SEAONC Office Updating Referral List

The SEAONC project referral list is being updated. This list is available free of charge to the public. It is both a service to the community and an aid to SEAONC members. Members' firms are listed with contact information and project types. The SEAONC office estimates that is sends out between thirty and fifty lists each month. If you would like your company to be included please print out the Referral List Form on the website, fill it out, and return it to the SEAONC office. Don't be left out!

Job Forum

AHEARN, KNOX & HYDE, INC. is a medium size structural firm in San Jose providing design services to the bay area for the past 32 yrs. We are looking for a self-motivated engineer with a minimum of 5 yrs. of experience in analysis & design of various types of buildings. We offer a very good benefits package along with SEP IRA plan, all fully funded by the firm. Salary is competitive & commensurate with experience & skills. Superb working conditions with congenial atmosphere. Fax résumés to 408/267-7919 or e-mail hyde@akhse.com.

STRUCTURAL ENGINEER. **DES Architects + Engineers**, a full service A/E firm located in Redwood City seeks SE licensed engineer, 5-10 years experience with strong interest in seismic engineering, retrofit and new building design. Projects include corporate campus, schools, hospitals, etc. DES offers a competitive salary, benefits package and employee programs. Visit www.des-ae.com and send résumés to Brandi Reyes at jobs@des-ae.com or fax to 650/364-2618

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.

Interactive Resources Architects & Engineers (www.intres.com) offers competitive compensation & benefits, ongoing career development, interesting projects, and a unique firm culture in a great historic coastal town in the East Bay. We also offer ownership potential. Registered PE minimum, SE preferred. CA/West Coast experience necessary. See our website for more information. Send résumé to 117 Park Place, Point Richmond, CA 94801. Fax: 510/232-5325.

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 is a 30+ employee Palo Alto firm currently seeking talented EIT's, PE's, & SE's. If you are a dynamic individual with great communication skills and enjoy diverse and challenging projects, we want to talk to you! RPSE offers growth opportunity, competitive salary, great benefits, and a superb working environment. Please fax cover letter & résumé to HR, Attn: Sharon at 650/ 428-2861 or email to sharonberman@rpse.com. For more details please visit www.rpse.com.

Career opportunities in the structural design of prestigious projects await you at **Rutherford & Chekene**, a recognized leader in structural design and seismic engineering. We have a large current workload and a significant backlog. Projects include museums, libraries, research laboratories, and hospitals. Opportunities are available in our San Francisco and Oakland offices for engineers with 3+ years of experience who have enthusiasm for participating in the design of some of the most exciting engineering projects in the Bay Area. CE/SE license and prior building design/detailing experience are a plus. If you wish to learn more, please contact Peter Revelli by phone at 510/740-3200 or e-mail at prevelli@ruthchek.com. Also visit our web site at www.ruthchek.com.

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

Watry Design, Inc. which is located in the San Francisco Bay Area, is in search of highly motivated engineers to join our rapidly growing team. Watry is a full service Architectural/Engineering Firm specializing in the design of large concrete structures, including high-rise hotels and apartments as well as award-winning parking structures. This position offers the right individual an opportunity to play an integral role in the design of multi-million dollar projects with a firm that fosters a cohesive family like environment. The applicant must possess a B.S. in Structural Engineering (or equivalent) with a P.E. or S.E license being highly desirable. A background in the design of concrete and post-tensioned structures, strong computer skills, and excellent communication skills are beneficial. If you would like further information regarding Watry Design, Inc., please visit our web site at www.watrydesign.com. Submit all résumés to: Watry Design Inc., 815 Hamilton Street, Redwood City, CA 94063 attn: Lisa Blanton or you can send electronically to lblanton@watrydesign.com

The KPA Group is looking for a Structural Engineer with new building design & seis-

New Members

Member

Matthew Bittleston, Prof. Engineer
SOHA Engineers

Scott Fischer, Assistant Project Mgr.
Watry Design Inc.

Anita Gupta, Structural Designer
Watry Design Inc.

Jason Lee, Project Engineer
Tipping Mar & Associates

James Liu, Designer
Degenkolb Engineers

Stephen Lord, Project Engineer
Hoogerwerf Engineering Group, Inc.

Jessica A. McInerney, Senior Designer
Watry Design Inc.

Andrew Mitchell, Designer
Degenkolb Engineers

Berta Rodriquez, Proj. Engr.– Structures
Rutherford & Chekene

Gina Sandoval
Degenkolb Engineers

Corrine Tan, Engineer
Ove Arup & Partners CA

Vesselin Tritchkov, Structural Designer
Structural Engineers, Inc.

Michael Unsworth, Struct. Plan Checker
Coastland Civil Engineers

Ryan Vuletic, Manager of Engineering
Simpson Strong-Tie

Job Forum, continued

mic retrofit experience. Advanced degree, professional registration w/3-5 years experience preferred. Send résumé and cover letter attn: Personnel to The KPA Group, 300 Frank H. Ogawa Plaza, Suite 50, Oakland, CA 94612 or e-mail to info@theKPAgroup.com.

MC&A, Inc. has an opening for Structural Engineers. Structual design on residential and/or commercial building, familiar with design of wood, concrete, steel and masonry, AutoCAD plus. Offer excellent benefits. Send résumé to: MC&A, Inc. 6155 Almaden Expressway, Suite 230 San Jose CA 95120 Fax 408/268-8916

Linhart Petersen Powers Associates (LP2A) has the following openings in their Citrus Heights & Pleasanton offices: FT Plan Review Engineer - Provide commercial/industrial/resid. bldg plan reviews for compliance w/ appropriate codes & eng principles. 3-5 yrs exp & current CA registration as a civil/structural eng/architect req'd. ICBO Plans Examiner Cert highly desirable. FT Plans Examiner & Sr Plans Examiner - (w/ arch emphasis in Citrus Heights). Provide arch & fire/life safety reviews for resid. & commercial projects. 3-4 yrs exp & ICBO Plan Examiner cert req'd. Résumé to 925/416-0996 or jobs@lp2a.com. EOE

At **St. Onge Associates** you can work with a close team of technical innovators who experiment with new products and ideas. Expand your skills and knowledge base while managing your own projects. Learn all aspects of the design and construction process working with architects, developers, government officials, and owners. *Assistant Civil/Structural Engineer***:** Majors required: A&ED Architectural Engineering (ARCE), ENG Civil Engineering (CE). Work as an assistant in the engineering of timber, concrete and steel structures. Projects involve residential, commercial, educational and light industrial construction, and retrofit work on concrete, steel and unreinforced masonry structures. Applicant must have successfully completed an architectural engineering or civil engineering with structural emphasis and 2 years applicable experience. Must be fresh and creative in your approach to selecting appropriate structural solutions, with an eye toward maximizing value to the client. Must be team-oriented, and self-motivated. Very good written and oral communication skills required. Good sense of humor desirable. Qualified candicates send résumé to jobs@stongeassociates, www.stongeassociates.com, 1934 Park Bl., Oakland, 94605 fax 510/444-1450

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.

Reminder:
October Newsletter Deadline
Tuesday, September 10, 2002
submit to: seaonc@ix.netcom.com

Posting for Membership

Member SE
Thomas Castle, Principal
Ficcadenti & Waggoner, Inc.
Kenton Lee, Principal
Liftech Consultants Inc.
Andrew McNulty, Proj. Engr.–Structural
Culp & Tanner, Inc.
Timothy Piland, Principal
Piland Structural Engineers, Inc.
Erik Soderberg, Principal
Liftech Consultants, Inc.

Member
Christopher Bradbury, Staff Engineer
Biggs Cardosa Associates, Inc.
Tracy Fidell, Civil Engineer
Liftech Consultants, Inc.
Akshay Gupta, Senior Managing Engr.
Exponent Failure Analysis Associates
Timothy Mathison, Vice President
Tuan and Robinson
Patrick McCarthy, Civil Engineer
Liftech Consultants, Inc.
Taryn Williams, Designer
Degenkolb Engineers
Yi Yang, Project Engineer
Summit Engineering

Associate
Karin Deas
Structural Solutions
Andrew Jackson, Engineer
Ove Arup & Partners
Che-Han Lee
W. Koo & Associates
Alexander Lornie
Lloyd Gossen & Company
Charles Sandschafer
Murphy Burr Curry, Inc.
Milo Zabala, EIT/Project Engineer
Strocal, Inc.

Industry
David Bellinger, Project Sales Rep.
Sika Corporation

Student
Emily Guglielmo, Graduate Student
UCLA

September 10th Dinner Meeting Program, San Francisco City Club

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load and resistance factor design; and (3) ultimate design. The ultimate level capacities were for check of loads occurring when the links in the eccentrically-braced frame yield during an earthquake. These ultimate loads were determined by plastic analysis.

A load test program was performed to confirm pile design recommendations. Two test pile locations were selected for compression, tension and lateral load tests to evaluate pile capacity and pile/soil stiffness under long-term, short-term and rapid loading conditions.

Foundation construction began by driving indicator piles. All indicator piles were monitored during initial driving using the Pile Driving Analyzer. Restrike data, obtained several days after initial driving, indicated significant pile-soil setup.

The majority of the 1242 production piles were then driven to acceptance criteria of 75 blows per foot and a minimum embedment of 10 feet into the dense sand bearing layer.

Donald W. Quigley is a Vice-President at Harding ESE, Incorporated. He has over 30 years of experience in earth sciences and engineering and specializes in the areas of geotechnical, civil and environmental engineering. He received a BS in civil engineering from the University of Southern California, and MS and PhD degrees in civil (geotechnical) engineering from the University of California, Berkeley. He is a registered Professional Engineer (Civil) in several states and a licensed Geotechnical Engineer in California. He has spent most of his career with Harding ESE (formerly Harding Lawson Associates).

Jamison Curry is an Associate at Rutherford & Chekene. He has over 15 years of experience as a consulting engineer to architects. He received a BS in civil engineering from the University of North Dakota and an MS in civil (structural) engineering from the University of Minnesota. He is a registered structural engineer in California and has been with Rutherford & Chekene for 10 years.

A Message from the President

Continued from page 1

For the meat of the convention, this year's technical presentations promise to be first rate. The program has been enriched with three full days of talks in two parallel tracks. These talks are samples of some of the best work our profession has to offer. Unlike many other technical conferences, SEAOC presents practical designs of real-world engineering. These talks can be sources of new ideas and new approaches to traditional problems. For me, there is nothing more inspiring than learning about great projects from great engineers. Come to the convention, freshen up your practice and get recharged.

The SEAONC NEWS is published monthly by the Structural Engineers Association of Northern California, 74 New Montgomery Street, Suite 230, San Francisco, CA 94105-3411. It is distributed to members of SEAONC as a membership benefit.

STRUCTURAL IMPLICATIONS OF EXPLOSIVE ATTACK

Continued from page 3

52,179 psi; at 20 feet it is 5752 psi; and at 100 feet it is 79 psi.

These impulsive loads last for only milliseconds, making such things as base-isolators and seismic dampers ineffective. Blast effects, because they are so short, cause local structural response, whereas a structure responds globally to seismic loading. As shown by the magnitudes of the pressures above, upward loading in a blast can be a very significant effect.

Design planning for blast is a team approach, involving owner, architect and all consultants. It is best achieved when begun early in the design. The basic ideas behind design for blast loading are similar to those for seismic. The primary goal is life safety - some risks are accepted - and no building is blast-proof.

Several lines of defense are required to stop, thwart, or blunt an attack. Active security measures, e.g. surveillance cameras, and passive perimeter security measures, e.g. concrete bollards or landscaping features, are first. Passive measures are especially effective as seen by the diminishing pressure-with-distance relationship noted above. The landscape architect is an important player in the design team, to prevent passive security measures from taking on a fortress-like quality.

Measures taken at the structure's envelope are next in line. The use of laminated, tempered glass or pre-cast panels and of upper-level set backs is encouraged; the use of unreinforced masonry or of transfer girders at the exterior is discouraged. Finally, measures in the structure's interior are made. These include use of ductile materials and detailing, use of slab systems, and use of redundant systems to prevent progressive collapse. Ductility factors of 30 are sometimes required and joint rotations of 12 degrees are encountered. Egress routes should not be clustered or covered in glass.

The presentation concluded with a discussion of the various roles that structural engineers play in responding to events like the World Trade Center bombing and how to remain safe in such situations.

Repeat Ad for
Computers and Structures

upcoming events

SEP	
10	**Dinner Meeting, The City Club**
18	**Business Forum Luncheon and Program**
25-29	**SEAOC Convention in Santa Barbara**
OCT	
5	**SEAONC ATC Training**

Registration

Structural Engineers Association of Northern California
SEPTEMBER 10th SEAONC DINNER PROGRAM, CITY CLUB, SAN FRANCISCO

5:45 PM
General Assembly

6:30 PM
Dinner

7:30 PM
Program

"Driven Pile Foundation Design and Construction at UCSF Mission Bay Genentech Hall Using Ultimate Soil and Pile Capacities"

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

BART:
Montgomery St. 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, September 6, 2002
Dinner and program reservations are limited. Register early! No cancellations after 12 noon, Friday, September 6, 2002. *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.*

COST:	PRE-REGISTERED	LATE REGISTRATION
SEAONC Member	❑ $34	❑ $39
Junior Mbr (29 and under)	❑ $28	❑ $33
Non-Member	❑ $39	❑ $44
Student	❑ $15	❑ $15

NOTE: New prices, and new age for Junior Member