

December 2nd Program

A Message from the President

Structural Expression Through Architecture in Asia

Mark Sarkisian and Neville Mathias
Skidmore Owings & Merrill

By Hamid Fatehi, Program Chair

A recent surge in building construction driven by China’s strong economy has created unique structural engineering design opportunities. Mark Sarkisian, SE, Partner and Neville Mathias, SE, Associate Partner of Skidmore, Owings & Merrill LLP will present recent work illustrating these designs. The projects are located in Beijing and Guangzhou and focus on solutions to high seismic and wind loadings, slender towers, unusual building forms, and long spans.

The following five (5) projects as summarized below will be discussed:

- ♦ The 100 meter-tall composite China Poly – Beijing project that includes one of world’s largest enclosed atriums that utilizes a 90 meter-high by 60 meter-long cable net wall. A museum, designed to be the centerpiece of the atrium, is suspended above the lobby floor by a diagonal cable-stayed system.
- ♦ The Poly Pazhou project consisting of two 150 meter-tall towers combining diagonally reinforced concrete screen frames with structural steel outrigger trusses. The towers have slender aspect ratios of over 8 to 1.
- ♦ The Legend – Raycom Phase II twin towers whose reinforced concrete shear wall cores act as supports for a 63 meter-long suspen-



sion cable roof structure that spans between them over an entry pavilion. Prestressed vertical cables are used to tie down the suspension cables while providing support for the exterior wall of the pavilion.

- ♦ The Goldfield International Garden project that incorporates exposed concrete stiffening frames into multi-story moment-resisting mega-frames for a 150 meter-tall tower. Special considerations for construction sequence and tuned lateral stiffness are evaluated.
- ♦ The concepts of incorporating the growth patterns of bamboo into the competition scheme for the 330 meter-tall China World Trade Center Tower in Beijing.

Happenings in Sacramento and Beyond

In early December the NCSEA member organizations will vote on the first certification program for structural engineers. NCSEA has endorsed certification as a first step toward separate licensing of structural engineers. Many structural engineers nationally have endorsed certification as a means to assure that only qualified and experienced civil engineers are involved designing major buildings. SEAOC is a major supporter of the certification concept and of NCSEA in general. Ron Hamburger will be the next NCSEA president.

The SEAOC Board recently sent a letter to Bill Vaughn, expressing its appreciation for his expenditure of personal resources and time in running for governor. The letter recognized Bill’s “principled motivation to expose in a public forum a politically-driven Building Standards Commission decision on the base code for California and the effect this can have on public safety.” As one of SEAONC’s own, Bill deserves special recognition from us for performing above the call of duty.

Regarding the Commission and its politically motivated decision, this is apparently not a done deal after all. The Schwarzenegger election will bring about changes in the makeup of the Commission and may change the politics that favored the NFPA 5000 over the IBC. SEAOC Executive Director Lee Adler reported to the SEAOC Board in October that he feels the chances are better than 50/50 that the decision will be overturned by the next Commission. SEAOC continues to work with the Codes Coalition (SEAOC, CBIA, CALBO and AIA) in strategizing on the next steps to be taken in Sacramento. Also,

Meeting Notice

Tuesday, December 2nd, 2003

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 **Wednesday, Nov 26th, 2003**

FAX: 415-764-4915

Continued on page 2

A Message from the President

Continued from page 1

on the Commission front, we finally have a structural engineer appointment to that long-empty commission seat. SEAONC Member SE, Kent Sasaki, of Wiss, Janney, Elstner Associates was recently appointed. Our congratulations to Kent.

The SEAOC Board engaged the services of the Pasadena firm of Collins, Collins, Muir and Stewart to prepare and file an Amicus brief in support of the structural engineering firm Teng Li. The case is now before a California Court of Appeals. The core and potentially precedent setting issue is whether design professional, including structural engineers, can be held liable in construction litigation to claims by diverse noncontractual third parties for purely economic loss. NSPE and CSPE joined SEAOC as joint filers of the brief and DPIC has contributed toward attorney's fees.

At the October SEAOC Board meeting, Alan Porush, Seismology and Structural Standards Committee Chair, submitted a work plan for the coming year and beyond. The plan was formulated largely based on a day-long meeting requested by President Jim Malley among a group of leaders and past leaders the Seismology Committee. A QA/QC committee is being formed to position SEAOC to play a stronger role in the development of quality control provisions in future codes, whether the code be the IBC or NFPA 5000. The QA/QC committee will be added as a third component (with Seismology and Code) under the Porush leadership. The new edition of the Blue Book is scheduled to be camera ready by June 2004. SEAONC's Dave Bonowitz has been leading the editorial effort in that project. The 2004 Blue Book will be based on the provisions of the 2002 ASCE 7, which is the structural/seismic standard for both competing codes.

The Seismic Design Manual series has been a critical and financial success for SEAOC as these volumes, which demonstrate the practical application of seismic provisions, have been a big seller among practicing engineers. However, the recently-developed IBC series has not enjoyed the success of the earlier series based on the 1997 UBC, primarily because the latter has outlived its originally intended life. The Board has

approved funding of the editorial effort for the next series, which will be based on a reformatted version of ASCE 7-02. That standard will have national application, which should assure the popularity the manuals the support it.

The holiday season normally has people thinking about giving to the charities of their choice. (The approaching end of the tax year may have something to do with that also). Among the many good causes are several related to and supported by our own organization. Your contributions are welcomed by the SEAONC Scholarship Fund, Rebuilding Together (formerly called Christmas in April), the Student Impact Project (the three-brick bridge folks) and Leap. Have a safe and happy holiday season!

- David Bonneville, President



AWARD WINNERS TO BE INTRODUCED AT MONTHLY DINNER MEETING

The 2003 SEAOC Excellence In Engineering Award winners from Northern California will be introduced prior to the program on December 2 at the City Club. The awards recognize the firms that are practicing excellence in the industry across a variety of different categories. Submissions for the 2004 are due April 30, 2004.

See Page 7 for more details.

CALENDAR OF EVENTS



December 2

San Francisco Dinner Meeting
City Club, San Francisco

December 4 - 5

AISC & SINY Symposium
New York, NY

December 10

Business Forum Luncheon
City Club, San Francisco

January 6

San Francisco Dinner Meeting
City Club, San Francisco

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, please see registration form inserted in this newsletter.

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QUALITY ASSURANCE CHALLENGES**Concrete Mix Designs and Slump Tests: A Christmas Tale**

By Tim Hart, SEAONC CQA Committee & DASSE Design, Inc.

A concrete pour for 24 drilled pier footings was scheduled for Christmas Eve. The footings were for a new steel framed mezzanine being erected inside an existing large warehouse. The contractor wanted to start erecting steel 3 days after the pour so he requested an early strength concrete mix. The mix designer came up with an 8-cement sack mix that would reach strength in 3 days. However, the contractor did not tell the mix designer that the concrete had to be pumped in from 200 feet away. Thus when the pour began, the concrete came out in chunks, as the high cement content and the long distance the concrete had to travel was causing the concrete to dry out as it moved through the tube. To remedy this the concrete contractor started adding a significant amount of water to the mix. However, as a result the concrete slumps exceeded the specified maximum, which prompted the special inspector to stop the pour.

A heated argument then ensued between the inspector and the concrete foreman. The foreman, desperate to complete the pour in one day, contested the place where the inspector was taking the slumps. The inspector was taking the slumps at the truck, basing this on the project specifications that called for the slumps to be taken in accordance with ASTM C143 and C172. The contractor (including the president of the concrete company who came out to the site specifically to chime in on this issue) claimed that "standard industry practice" was to take slumps at the point of placement. The inspector then contacted the structural engineer, who agreed with the inspector's position that the slumps should be taken at the truck, citing the recommendations of ASTM C172.

Finally the construction project manager got involved and, acknowledging the impasse on the slump issue, asked the concrete sub to get another mix that could be pumped and also meet the slump requirement. The sub was initially hesitant to do this thinking that the mix designer had already left for the holidays and thus the pour would be delayed until after Christmas. Fortunately everyone, including the mix designer and the structural engineer, were still in the office and thus within an hour a new mix using less cement and more plasticizer was prepared and

approved, and the contractor was able to finish the pour in time for Christmas Eve dinner.

The main lesson learned was that the engineer should be aware of unusual conditions when reviewing mix designs and preparing specifications. While it is normally not the engineer's responsibility to account for means and methods of construction when checking mix designs, he could have notified the mix designer that the concrete had to be pumped 200 feet and perhaps suggested using a plasticizer instead of extra cement to make the mix more flowable and still achieve early strength.

The engineer should also be aware of what the project specs call for, particularly where the specs refer to another standard. ASTM C143 and C172, the referenced standards for slump tests and sampling of concrete respectively, state that slump samples are normally taken at the truck. However, it also acknowledges that the project specifications may require that slumps be taken at other locations, including at "the discharge of a concrete pump." ACI 304.2R "Placing Concrete by Pumping Methods" recommends that samples be taken at both the truck and at the point of placement to determine if there are any changes to the mix during the pumping procedure. This document also suggests that samples taken at the point of placement provide a more representative measure of the quality of the concrete. However, there doesn't appear to be a specific provision in ASTM, ACI, or the CBC that specifies where slumps should be taken. If the engineer had been aware of this ambiguity the project, he could have specified the sampling location rather than referencing ASTM, and thus the inspector would have had a strong counter argument to the contractor's "standard industry practice" claim. Also, if the engineer or the inspector had known that both ASTM and ACI acknowledge that there may be cases where samples could be taken at the point of placement they could have confidently used this as a fall back position, thus perhaps saving hours of argument and accusation and making everyone's Christmas a little bit merrier.

**Business Forum**

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Bylaws

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Computer Applications (TBD)**Construction Quality Assurance**

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Young Members Forum

Ali Afrasiabi
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Industry Events

AISC CO-SPONSORS BLAST & PROGRESSIVE COL- LAPSE SYMPOSIUM

The American Institute of Steel Construction (AISC) is jointly sponsoring with the Steel Institute of New York (SINY) a symposium to examine blast and progressive collapse issues. The symposium is scheduled for Dec. 4-5 in New York, NY, and will present an overview of current design standards and procedures as well as methodologies for threat assessment.

Speakers at the Symposium on Resisting Blast and Progressive Collapse include renowned experts including: Mohammed Ettouney from Weidlinger Associates; Ramon Gilsanz from Gilsanz, Murray, Steficek; Ron Hamburger from Simpson, Gumpertz and Heger; and Ahmad Rehamian from Cantor Seinuk.

Registration is \$100 for the two-day symposium, which will be held at the McGraw-Hill Auditorium, 1221 Avenue of the Americas, New York, NY. Attendees will receive 9.75 PDH (.975 CEUs) and the full conference proceedings. For more information, visit www.aisc.org or call Janet Cummins (312.670.5411) or Gary Higbee (212.697.5553).

For more information on AISC's blast and progressive collapse symposium, visit www.aisc.org/blast.

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

\$51 - \$150

Justin Nero

\$50 and under

Roderick Murray

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

New Members

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Member SE

Troy Swenson
Project Engineer, CH2M Hill

Member

Michael Allen
Designer, Degenkolb Engineers
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Engineer, Rinne & Peterson
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Farid Ibrahim
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Lorraine Lin
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Engineers
Justin, Moreno
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Gregory Totten
Civil Engineer, OLMM Consulting
Engineers

Associate

Gregory Cashen
Engineering Project Manager, DCC
Engineering
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Structural Designer, Vertex RSI
Derek Johnson
Structural Engineer, The Crosby Group
Jeff Kersh
Design Engineer, Ficcadenti &
Waggoner
David Nesbet
Engineer
Marc Percher
Engineer, Hinman Consulting
Manuel Rivas
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Santa Clara
Mike Rookstool
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Designer, Degenkolb Engineers

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The **Applied Technology Council (ATC)** is pleased to announce the immediate availability of the following recently completed reports, which are available through the ATC office (201 Redwood Shores Parkway, Suite 240, Redwood City, California 94065; phone, 650/595-1542; fax, 650/593-2320; e-mail, ATC@ATCouncil.org and ATC's Online Store (www.ATCouncil.org):

ATC-13-1 Report, *Commentary on the Use of ATC-13 Earthquake Damage Evaluation Data for Probable Maximum Loss Studies of California Buildings.* The purpose of this *Commentary* is to provide guidance to consulting firms who are using ATC-13 expert-opinion data (published by ATC in 1985) for probable maximum loss (PML) studies of California buildings. This report explains the development of the ATC-13 expert-opinion estimates of physical damage caused by earthquakes, the limitations of the ATC-13 data, and the issues associated with using the data for PML studies. The report also contains three appendices containing information and data not included in the original ATC-13 report: (1) ATC-13 model building type descriptions, including methodology for estimating the expected performance of standard, nonstandard, and special construction; (2) ATC-13 Beta damage distribution parameters for model building types; and (3) PML values for ATC-13 model building types. The report was funded by ATC's *Henry J. Degenkolb Memorial Endowment Fund* (66 pages; \$30 per copy, plus shipping and sales tax). All proceeds from the sale of this report will be deposited in the *ATC Endowment Fund*.

ATC-51-1 Report, *Recommended U.S.-Italy Collaborative Procedures for Earthquake Emergency Response Planning for Hospitals in Italy.* The report contains: (1) descriptions of current procedures and concepts for emergency response planning in the United States and Italy, (2) an overview of relevant procedures for both countries for evaluating and predicting the seismic vulnerability of buildings, including procedures for postearthquake inspection, (3) recommended procedures for earthquake emergency response planning and postearthquake assessment of hospitals, to be implemented through the use of a Postearthquake Inspection Notebook, which is included as an appendix in the report, and demonstrated through the application on two representative hospital facilities; and (4) rec-

ommendations for emergency response training, postearthquake inspection training, and the mitigation of seismic hazards. The report was developed with funding from the Servizio Sismico Nazionale of Italy (Italian National Seismic Survey, NSS) (120 pages; \$55 per copy, plus shipping and sales tax).

ATC-57 Report, *The Missing Piece: Improving Seismic Design and Construction Practices,* was developed to provide a framework for eliminating the technology transfer gap that has emerged within the National Earthquake Hazards Reduction Program (NEHRP) that limits the adaptation of basic research knowledge into practice. The report defines a much-expanded problem-focused knowledge development, synthesis and transfer program to improve seismic design and construction practices. Two subject areas, with a total of five Program Elements, are proposed: (1) systematic support of the seismic code development process; and (2) improve seismic design and construction productivity. The report was funded in part by NIST and in part by ATC (102 pages; \$40 per copy, plus shipping and sales tax).

Abstracts of not more than 250 words are due by **March 1, 2004**, and should be sent to the 2004 SEAOC Convention Technical Program Committee at the contact information provided below. Authors will be notified of abstract acceptance by April 1, 2004. Papers ready for publication in the proceedings are due by June 1, 2004. Authors will be provided with detailed guidelines regarding paper format after acceptance of the abstract. Papers not conforming to the guidelines will not be published and may not be eligible for presentation at the convention.

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Technical Program Committee Chair

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2004 L.A. TALL BUILDINGS CALL FOR PAPERS

The 2004 Annual Meeting of the Los Angeles Tall Buildings Structural Design Council will commemorate "A Decade of Experience." The focus of the meeting will be the *direct effect on structural engineering design practice from the key earthquakes of the past 10 years*, including the 1994 Northridge Earthquake and 1995 Kobe Earthquakes.

The Council is calling for papers for the annual meeting to be held in Los Angeles on May 7, 2004 at USC's Davidson Center. Considering the context of the past 10 years, suggested topics for papers include: impact of new knowledge on structural design practice, impact of changes in building code provisions for steel, concrete, precast concrete, masonry, wood, nonstructural components, and energy dissipation, impact of new geotechnical engineering practices, changes in the legal environment and shortcomings still be to rectified. A one-page abstract describing the content of the paper must be received by December 15, 2003. Final papers are due March 15, 2004.

Submit abstracts to:
Dr. Gregg E. Brandow, LATBSDC Executive Director
Brandow & Johnston Associates
1660 West Third Street
Los Angeles, California 90017
Email: gbrandow@bjase.com
Web: www.TallBuildings.org

CALL FOR ABSTRACTS

**Structural Engineers Association
of California (SEAOC)
75th Anniversary Convention
August 25-28, 2004
The Doubletree Hotel - Monterey, CA**

Abstracts are requested for papers to be presented at the technical sessions of the 2004 SEAOC Convention. Papers may either focus on a recent project or a research and development effort. Emphasis will be on the following topics:

- ◆ New Seismic Systems and Components (ex. Energy Dissipation, SMRF, BRBF)
- ◆ Next Generation Codes/Guidelines (ex. ASCE-7, ATC-58, NEHRP)
- ◆ Improvements to Current Codes (ex. Gusset Plates, Orthogonal Effects, New Blue Book)
- ◆ High Performance Materials/ Smart Structures
- ◆ Fire/Impact/Blast
- ◆ Progressive Collapse
- ◆ Foundations/Geotechnical
- ◆ Non-Structural

Practical Application of Simulation in Seismic Engineering

Eric Ko, S.E. Arup

By Pat Chow, South Bay Program Chair

The October South Bay meeting featured a presentation by Eric Ko, S.E. on the practical use of computer simulation in seismic engineering. Mr. Ko, the winner of the 2000 H.J. Brunnier Award, shared his positive experience and results of full scale tests vs. computer simulated specimens. In fact, Mr. Ko advocated the economical advantage of using simulation to optimize structural solutions for project specific performance objectives.

Mr. Ko presented examples of computer simulation – such as a truck crashing into a highway bridge support and a crash test of automobiles; for obvious reasons, simulation was more economical than testing. The Northridge and Kobe earthquakes brought on structural damage and subsequent studies that lead to full scale testing of structural members and connections – such as the welded moment frame connection. Mr. Ko pointed out the disadvantage of high cost full scale testing and the economical advantage of using computer simulations to achieve similar results.

Computer simulation was also used to analyze and optimize the performance and the thickness of doubler plates in new welded moment joint connections. Mr. Ko demonstrated his success in using analytical results to minimize full scale testing on projects.

More recently, Mr. Ko applied simulation to the development and use of Unbonded Brace. Some of the focus and findings are as follows:

- The determination of R value was “most emotional” = controversial and not reconciled
- Although most brace configurations showed good results, the chevron brace seemed to be more “forgiving” due to the apex rotating
- Single diagonal brace performs the same as chevron. But there are some gusset plate yielding issues
- Adding stiffeners at gusset plate shows no benefits due to higher strain in the gusset
- Tapering the gusset is more harmful due to tendency to rotate out-of-plane
- The use of curved gusset plate corner (with runoff) seem to reduce strain at the weld
- The columns are the critical frame elements
- Use beams with thicker web to reduce web yielding
- The design of the gusset plate is more critical due to the larger drift

*1/3 page ad
AISC*

In closing, the costs of the labor, software and hardware was discussed briefly. In a nut shell – it took SEAONC member Andrew Mole ONE day to model the unbonded brace and gusset plate (after working at similar models for ten years using a very powerful computer). The software is a LBL program.

Our thanks to Mr. Ko and his contribution to structural engineering.

SEAOC 75th Anniversary Awards of Excellence

- To be presented at the 2004 - 75th Anniversary SEAOC Convention as a PowerPoint slide presentation.
- To celebrate 75 years of SEAOC major accomplishments and major designs
- To be included in a publication on the history of SEAOC
- Celebration will include top 75-100 entries.

Eligibility

- Project was designed between 1929 to present by a SEAOC member
 - Design firm had SEAOC member
 - One of the project engineers was a SEAOC member
 - Engineers on a committee were SEAOC members
- Major accomplishments by SEAOC or SEAOC related organizations such as BSSC, ATC, FEMA etc. which have occurred since 1929 in which SEAOC members were major contributors
 - Such as Blue Book, ATC-3, ATC-14, ATC-20, FEMA 178, FEMA 273/356, BSSC, ASCE-7, formation of ATC, formation of BSSC, AISC Seismic, Seismic Provisions of NEHRP, UBC, IBC, ASCE, NFPA etc....committee chairs or members or people who remember... please enter these!!!!

Entry Categories

- Projects.....major buildings, structures, monuments, or infrastructure.ENTRANT NEED NOT BE THE DESIGNER.
- Major Accomplishments by SEAOC or SEAOC related organizations

Awards

- Will be included in 75th Anniversary presentation at 2004 Convention
- A SEAOC Commemoration Award will be given

Judging Criteria

- Team of judges from each SEAOC Section will judge the entries. The SEAOC Public Relations Committee will create a presentation for convention.
 - Significance of building, structure, monument or infrastructure project.
 - Historical significance of event (in SEAOC terms).
 - Significance of accomplishment (in SEAOC terms).
 - Application of innovative design approaches
 - Use of innovative construction methods
 - Significance of engineering achievement
 - Elegance of the design
 - Creative solutions to the project program requirements

Submittal Requirements

- One entry cover letter with: name and location of project; structural firm(s) responsible; architect; general contractor; owner; size; and construction cost.
- One MS Powerpoint slide w/ digital picture, design team + project statistics.
- One page (maximum) write up in Microsoft Word about project and why it was a major contribution.

How to Enter

- Send entry to SEAOC office at 1730 I Street, Suite 240, Sacramento, CA 95814 by end of day 4/30/2004.
- Send entry on diskette or CD.
- No fax or e-mail entries.

For more information, contact SEAOC PR Committee or Jon Kiland, 2004 SEAOC Convention Chair, at kiland@dasse.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). 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

Structural Engineer - Are you dynamic, competitive, creative? **Marr Shaffer & Miyamoto** is ready for you. Established over a half a century ago, MSM is one of the most respected engineering firms, with an office in Pasadena and Sacramento. Our projects range from complex high-rise structures to commercial buildings with expertise in seismic rehabilitation and state-of-the-art design procedures. In earthquake engineering we design retrofits and new buildings with dampers, base isolators and fiber reinforced plastic. We are seeking project engineers, project managers, and CAD drafters. Communication skills and a commitment to be the best are essential. We offer a great working environment, a complete benefit package, and a chance to take a great life journey! Check out our website at www.msml.com for more information. If you are ambitious and have a minimum 2+ years experience with a variety of building materials (steel, concrete, timber), please submit your resume to resume@msml.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 steve@tippingmar.com

Harris & Sloan Consulting Group, Inc., a growing full-service structural engineering consulting firm in Davis, Ca., offers a relaxed, professional working environment in the heart of downtown Davis. Our firm has immediate openings for outstanding individuals seeking to grow professionally in a positive work environment. We offer excellent compensation, a 401(k) plan with employer matching, a benefits package including medical, dental, and vision coverage along with a great working environment. We are currently seeking all experience levels of engineers and CAD Operators to join our growing team of quality individuals. If you have exceptional interpersonal, communication, and organizational skills and are committed to providing excellent customer service, come and join our growing firm! Fax your resume in confidence to (530) 753-5380 or email to main@hscgi.com.

PARDIGM 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 de-

velopment, 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

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.

KPFF Consulting Engineers is seeking Project Managers and Engineers for full time employment. Applicants must be motivated and possess excellent written and verbal skills. KPFF offers our employees an environment that supports personal growth, education and training, and the freedom to pursue individual career goals. If you have at least 3 years of design experience, a PE license, an advanced degree in structural engineering, and an interest in Structural Design, we want to hear from you. Send cover letter and resume to KPFF 1160 Battery St., Suite 300, SF, CA 94111. EOE

PEOPLES ASSOCIATES STRUCTURAL ENGINEERS, a growing Structural Engineering consulting company in the Bay Area, is looking for talented and energetic people to join our firm. We offer a competitive salary, excellent benefits and a team-oriented atmosphere that encourages professional growth. BS required (MS preferred). Experience is a plus. Mail resume & cover letter to 529 S. Main St., Milpitas, CA 95035. Fax: (408) 957-9221. Email: mail@pase.com.



**Job Forum
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characters/spaces

\$15 for each 45
characters/spaces
thereafter

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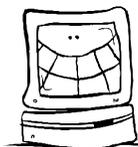
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**January News
deadline:
Wednesday,
Dec. 10th, 2003**

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



New Industry Publications

Monographs on *Fundamentals of Seismic Protection for Bridges and Seismic Design with Supplemental Energy Dissipation Devices* Available from EERI

The Earthquake Engineering Research Institute is pleased to announce that a 184-page hardcover monograph entitled *Fundamentals of Seismic Protection for Bridges* by Mark Yashinsky and M. J. Karshenas has just been published. It covers the basic aspects of the seismic performance of bridges during past earthquakes, current practices in the seismic analysis and design of new bridges, and retrofit strategies. Also included is an extensive glossary of terms pertaining to bridges and their elements. Its price is \$45.00 plus shipping and sales tax for California residents. EERI members will receive this monograph at no charge.

The monograph examines how bridge performance has been affected by construction, design details, proximity to different hazards, and the characteristics of surrounding soil. In exploring current practices for new bridges, it deals with how to design bridges for the variety of hazards that can occur during an earthquake. Also described are seismic demands on bridges and performance-based design; i.e., how to design and detail bridges and their elements to meet performance requirements.

Additionally, the monograph focuses on the steps that a comprehensive bridge retrofit program would require, including the prioritizing, screening, and selection processes, as well as the analysis needed to identify vulnerabilities and develop alternate retrofit strategies.

Its price to non-EERI members is \$45.00 plus shipping and sales tax for California residents (\$35.00 for EERI members). To place an order online, visit http://www.eeri.org/cds_publications/catalog/ and click on the Publications link under the "Categories" heading. This web site page also has information about other EERI publications and special deals. Orders can also be placed by calling 510/451-0905, or e-mailing eeeri@eeri.org.

SEAONC BUSINESS FORUM DECEMBER MEETING

Smart Marketing

Wednesday, December 10, 2003

12:00 pm – 1:30 pm

City Club – San Francisco

155 Sansome Street, Game Room, 10th Floor

How to maximize the effectiveness of our marketing effort?

What is a good strategy to get the most out of the collective business development efforts of the marketing staff, the principals and other technical staff?

How to train and engage the technical staff in business development activities and in developing client relationships?

We all know how critical it is to establish and maintain strong client relationships. Achieving this consistently requires a partnership between the marketing department and the technical and design professionals. How do we create this partnership?

These and other related topics are what we are going to discuss in our December meeting. We have invited Kay Godwin, Principal with Marketing Avenues, to share her insights on how engineers can develop their client base and can partner with their marketing departments to strengthen the entire business development process.

Kay Godwin is a marketing consultant with 23 years of experience and an established reputation in the A/E/C industry. She has been helping engineers, architects, contractors and other consultants with developing and implementing marketing programs. Before starting her own company in 1992, she managed corporate marketing services for a number of consulting engineering firms. She is an adjunct instructor for the Advanced Management Institute and has taught workshops for numerous organizations, including ACEC, the Professional Environmental Marketing Association (PEMA), AIA and the Society for Marketing Professional Services (SMPS). She is a Certified Professional Services Marketer and an SMPS Fellow.

This is an excellent opportunity to get good coaching from a respected expert in the field. We encourage you all to attend and to bring your future rainmakers!

Cost: \$20 for Business Forum Members
\$30 for Non-Business Forum Members

Meal Selections: Chicken, Flank Steak or Pasta

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

Registration Deadline is **Monday, December 8th, at 12:00 p.m.**
Space is limited so register early.

NOVEMBER 4TH EAST BAY PROGRAM WRAP-UP

By Katherine Steinhardt, Program Committee

At the annual East Bay meeting held at the UC Berkeley Faculty Club, Prof. Constantinou delivered a lecture entitled ‘Seismic Protective Systems: Seismic Isolation and Damping Systems.’ He gave an overview of seismic isolation and damping systems followed by some research results on recent innovations and concluded with case studies and applications of recent code requirements for these systems.

Isolation and damping systems rely on controlled dissipation of energy to prevent damage to the structure from design demands. Base isolators, as they are often referred to, allow the structure to displace at the isolator and dissipate energy through a variety of devices. Some types of isolators include elastomeric, lead-rubber, sliding and elasto-plastic. Damping devices can be passive, semi-active or active and often use viscous damping to dissipate energy.

Prof. Constantinou emphasized three important requirements for a successful application of isolation design: the structure must remain elastic or nearly elastic, there must be an adequate restoring force in the isolation device and boundary methods of analysis must be used to capture the variable nature of materials in isolators. He went on to present some examples of material variability and experimental results that support the property modification factors for isolators in the latest codes. Lastly, Prof. Constantinou discussed several case studies that ranged from energy facilities and bridges to more traditional building structures. These case studies illustrated the importance of his design recommendations as well as the usefulness of static simplified analysis for isolation design.

Prof. Constantinou summarised types of passive, semi-active and active damping systems. Buckling-restrained brace frame and viscous elastic dampers placed in brace frames act as passive dampers. Semi-active dampers can modify their properties during an event. Active dampers require high power actuators, sensors and controllers. Several damper configurations were presented including configurations such as scissor-jack, which give high damper to building drift displacement ratios. He concluded that reliability, maintenance and longevity of damping systems are important factors to consider when evaluating their applicability for a certain project.

*Ad for
Computers and Structures*

upcoming events

DEC

2 San Francisco Dinner Meeting
City Club, San Francisco

4 - 5 AISC & SINY Symposium
New York, NY

10 Business Forum Luncheon
City Club, San Francisco

JAN

6 San Francisco Dinner Meeting
City Club, San Francisco

Registration

**Structural Engineers Association of Northern California
December 2ND SEAONC DINNER PROGRAM, San Francisco, City Club**

5:45 pm
General Assembly

6:30 pm
Dinner

7:30 pm
Program

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

BART:
Montgomery St. Station,
exit on Sansome Street

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

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

Deadline for pre-registration: 12 noon, Wednesday, November 26th
Make check payable to SEAONC and bring with you to the door.

Register early! Dinner and program reservations are limited. No cancellations after 12 noon, *Wednesday*, November 26th, 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.

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