



EQUILIBRIUM

Newsletter of the Seattle Chapter
Structural Engineers Association of Washington

DECEMBER 2007

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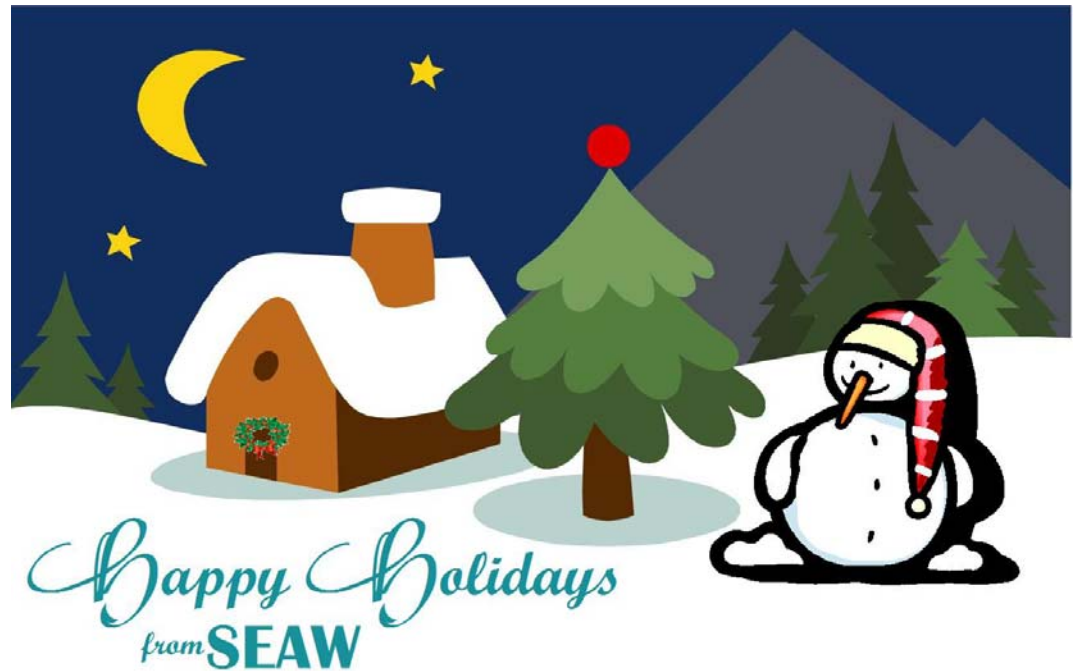
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www.seaw.org



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**No Meeting in
December**

Coming In January:

Lunch Meeting

Tuesday, January 22

Instead of our usual dinner, we'll try a lunch format for our last meeting at the College Club before it closes its doors.

Mark Your Calendar

December 2007

Monday	17 th	Seattle Chapter Board meeting (no dinner meeting in Dec)
Friday	28 th	January Newsletter deadline

January 2008

**HAPPY NEW YEAR!
Dues Statements Emailed**

Tuesday	22 nd	Seattle Chapter Board meeting 10:00 AM
Tuesday	22 nd	Chapter LUNCH meeting 12:00 Noon at the College Club -election of nominating committee
Friday	25 th	February Newsletter deadline
Friday	25 th	State Board meeting
Wed	31 st	Deadline for nominating committee to submit candidates' names

February 2008

Wed	13 th	National Engineers week, Feb 17 – 23 ACI hosts joint meeting
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March 2008

Friday	14 th	SEAW seminar: "Floor Vibrations - A Critical Serviceability Issue"
Tuesday	25 th	Joint meeting with ASCE: Green Design

April 2008

Wed	16 th	SW Chapter Hosts: Nucor Steel Mill
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Watch the SEAW website for Calendar updates!

FROM THE BOARD: SEAW Needs You!

I think most would agree that this last year, regarding the construction industry in the Seattle area, has been one filled with many accomplishments that will be worthy of entry into the record books. In fact, there are few, if any, aspects of our profession this past year that one would not consider anything less than incredible. We have seen the completion of the new Tacoma Narrows Bridge as well as the collapse of the I-35 West bridge in Minneapolis. We have seen record numbers of tower cranes being erected in Seattle and Bellevue and record lengths of backlogs in most companies. I recall an article in the Daily Journal of Commerce that stated some of the bigger architectural firms in town were hiring about 50 people per month. I have spoken with other engineering firms that indicate that the amount of work they turn down competes with the amount of work they take.

The bridge collapse in Minneapolis has brought the current condition of our infrastructure to a level where it is receiving national attention. The report card issued by ASCE for 2005 indicates that we need to spend 1.6 trillion dollars in the

next five years to get our infrastructure to a point where it is in "good" condition. The tower cranes have been an indication that the commercial and industrial building industry locally remains strong. In fact forecasters predict that while there may be some slowing locally, the general climate will still remain positive toward continued strong activity. All indications are that our profession can look forward to a continued pace much like what we have experienced the last few years; the demand for structural engineering resources will continue to increase.

ASCE also has a review of the numbers of bachelors degrees issued in various disciplines of engineering over the last several years with data available through the year 1999. When reviewing the history of bachelor's degrees issued for Civil Engineering, one would see that those numbers reached a peak of approximately 25,000 annually in 1987. Since that time the numbers of degrees issued on an annual basis has been declining. In fact in 1999 the number of BS degrees in Civil Engineering was approximately 15,000 or a 40% decrease from the peak in 1987. Examining factors that may influence this trend one may look at the birth rate statistics in the US as provided by the Center for Disease Control with data available through the year 2002. We are in the midst of a 12-year decline with 2002 having the lowest birth rate since national data has been available.

It seems very clear that our industry demand will continue to grow and it will be increasingly more difficult to supply resources necessary to meet that demand. Furthermore, the difficulties we are seeing now will very likely get worse. Keep in mind that the last issue of the SEAW Equilibrium consisted of 10 pages and 4 of those were devoted to help wanted ads from 20 different firms.

Now that the picture has been framed, we need to ask ourselves, as a profession, what, if anything do we need to do to address this trend? With construction costs already rising over the life of a project, do we ask our clients to wait longer? What level of quality do we want to maintain with our set of documents? There are a plethora of questions that come to mind when considering this trend. I would like to suggest that we all take a look at our effort, collectively, to promote our profession. I have been a member of SEAW for about 24 years, but have not really contributed much until just this past year with my election to the Board of Directors. In just the few months since my election I have gained a great deal of insight and made numerous acquaintances that have brought benefits to me already. Having an opportunity to talk with other engineers across the country, both staff and management, it has become clear to me that this trend is being dealt with by others in our profession in very creative ways already. Everyone seems to



be in agreement that we need to bring our profession to the public and specifically to the younger portion of the public. By the time students are in college it is apparently too late, so we need to focus on the grade school and high school levels. Reaching parents would also be effective and could be accomplished through speaking at various events concerning our industry. The bottom line is that there has never been a more important time for you to become involved in SEAW. Please attend the monthly meetings and ask us how you can help. Owners, please encourage your members to attend by creatively offering incentives. We will be looking forward to hearing from you all in the near future.

Have a happy holiday season and a prosperous new year.

-Peter Opsahl

Peter Opsahl is the President of Peter A Opsahl Structural Engineering, Inc, founded in 2001. He is a 24 year member of SEAW and currently serves on the Chapter Board. Peter can be reached at peter@paostructural.com

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Advertising rates (prepaid, please): Help Wanted/Job wanted, \$50 ; Display ads: Quarter page, \$90; Half Page, \$120; Full Page \$150; inserts, pre-printed 8 1/2 X 11 inch flat, \$150. 10% discount for ads running two or more months. Deadline is the fourth Friday of the month. Contact SEAW for an Advertising Order Form.

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YMF Corner: November Recap

November was a busy month for the YMF with a foundry site tour, social hour events in both Seattle and Bellevue, and the YMF Dinner meeting at the University of Washington. All events were well attended, especially the dinner meeting with 86 total attendees, 41 of which were university students. The Seattle Chapter membership is growing with almost 30 applications currently in process, many of which are younger members. These are good signs for SEAW and the YMF is ready to expand its programs with the increased membership.

North Star Casteel Foundry Tour

Bill Gibb, president of Steel Cast Connections, hosted the YMF at a site tour of the North

Welcome to the YMF Corner. This new section of the newsletter is designed to keep the Seattle Chapter updated on Younger Member Forum activities. It will recap recent meetings, feature YMF members and advertise upcoming events. Make sure to check back monthly for updates.

Star Casteel Foundry. The foundry, located in the industrial area south of Seattle, produces various cast steel products, from railroad junctions to architectural building components. The foundry also produces the Kaiser Bolted Bracket, a proprietary moment connection that is currently undergoing AISC qualification. Bill started the tour with a pres-



Bill Gibb, left, discusses casting techniques with the YMF.

entation covering the development, testing, and application of the bracket. The bracket was originally developed after the Northridge earthquake as a repair or retrofit connection. As a retrofit solution, the connection is particularly appealing as no field welding is required. A foundry tour followed the presentation where the group was able to observe

various casting processes.

- Cale Ash

Cale Ash is a Design Engineer with Degenkolb Engineers. He has been a member of SEAW for three years, and currently serves as chair of the Younger Member Forum. Cale can be contacted at cash@degenkolb.com.



Meeting Recap

November YMF/Student Meeting Draws Lively Crowd

The rousing success of the third annual Student/Younger Member Forum (YMF) meeting has firmly established this event as an annual Chapter tradition. This year's meeting was an even greater success than its predecessors with nearly half of the 86 attendees being university students.

The evening began with a showcase of ten local structural engineering firms representing a broad range of firm size and project type. The ten sponsor firms were: Berger/ABAM, Cary Kopczynski & Co, CG Engineering, DCI Engineers, Degenkolb Engineers, INCA Engineers, Integrus Architecture, KPFF Consulting Engineers, Peter A Opsahl Structural Engineers, and Washington Group International. The showcase provided the students with a good first look at our profession, the types of work we do,

and the various opportunities out there for younger structural engineers.

Following dinner and a brief welcome speech by Seattle Chapter president Shelley Clark in which she extolled the benefits of student SEAW membership, YMF chair Cale Ash provided a summary of the YMF goals and activities (see YMF Corner for more information).

The main program featured a summary of three student projects, one at Seattle University and two at the University of Washington.

The Seattle University presentation covered a replacement bridge project located in Snohomish County near Kenmore. The project team, consisting of students Edward DeBroeck, Brandon Estrella, Matthew Hennessey, Ryan Tilley and advisor Dr. Jeff Dragovich, are in the preliminary design phase of a year-long project. The team's presentation focused on the initial portions of the

work, including developing proposals, schedules, deliverables, and preliminary design considerations. The team will be evaluating several options for the foundation and superstructure and then eventually taking the preferred option through construction drawings and specifications.

The second presentation was by UW Masters student Wayne Brown on his research into reinforcing steel bar buckling in concrete columns. The research focused on the buckling of longitudinal column bars due to cyclic loading of round bridge columns using one-third scale specimens. The testing program studied the influence of several parameters on this phenomenon that is somewhat poorly understood, but often observed following major earthquakes.

UW Masters student Dave Brown made the final presentation on his research into the performance of fiber

reinforced polymer (FRP) bridge decks that are being considered for the widening of the historic Granite Falls bridge located outside Granite Falls. The project consisted of in situ and laboratory testing of two types of bridge decks composed of FRP systems. The first type consists of wide flange sections supporting an upper deck, and the second type consists of tube sections, laid side-by-side and bonded together with an upper deck. The testing program studied the strength, deflection, and connections of the two systems in order to determine this system's suitability for the bridge renovation.

All three presentations were impressive both in terms of the content and delivery and clearly demonstrate the high quality of the local university structural programs. SEAW and certainly the students offer a special thanks to DCI Engineers and Degenkolb Engineers who jointly sponsored complimentary attendance for all the students.

2007 is Coming to a Close! Are Your Dues Paid?

A Reminder from your SEAW Administrator

We're coming to the end of another year, marking the second year of our new online membership system. With this new system, membership dues are being invoiced by e-mail at the beginning of the year. It was my intention to follow-up with mailed invoices mid year. By waiting until many members had paid their dues, we would cut much of the administrative costs associated with printing and mailing invoices. Unfortunately, due to a few glitches in the system, this did not happen.

So now that the year is winding down, there has been a flurry of dues reminders sent by e-mail over the past few weeks while I try to get every-

one caught up before year's end. Response has been brisk; however we still have a considerable number of members who remain unpaid for 2007.

Please take a look at the unpaid dues list. If you find your name, we have no record of receiving your dues payment. Instructions for paying your dues online can be found on the back page of this newsletter.

Your dues help SEAW fund valuable programs for the benefit of the membership, the public, and the profession.

Thanks for your support!

Lynnell Brunswig,
SEAW Administrator
seaw@seaw.org

Members Unpaid as of December 5, 2007

**denotes no e-mail address; dues reminder in the mail!*

Jose Alma Jose	Gerald Dorn*	Heung Kim*
Karl Anderson*	Kingsey Drake	Robert Kimmerling
Gregg Andrus	Nick Fett	Gordon Lecair *
Douglas Applegate*	Dennis Firth	Michael Leonard
Ahmad Asili	Benjamin Fisher	Pai Chieh Lin*
Ross Atkinson	Michael Fitz	Hans Lund
Madison Batt	Chris Frossard	Randolf Martens
Michael Bledsoe	William Grosvenor	Jeff McGuire
Paul Brallier	James Hagensen	Duane McMahan*
Wayne Brown	Heather Hirst	Mike Mitchell*
Tim Carlson	David Houchin	Hamid Naderi-
Michael Carney	Michael Huggins	IASrami
Clint Chapman	John Hutchins	Khoa Nguyen
Ark Chin*	Jerry Jackson	Craig Nishina
Bryan Collons	Gregory Jacobson	James Paustian
David Cotton	Darrell Johnson	James Perrault*
Seth Cutler	Harvey Johnson*	Jack V Peterson
Alexandre Dehoux	J. Clark Johnson*	Steven Pfeiffer
Nancy Devine	Edward Kaiser*	

Continued on back page

Meetings/Seminars

SEAW TRADESHOW

The SEAW Southwest Chapter will hold the 12th Annual Tradeshow on Wednesday, **February 20, 2008**

This event will feature exhibitor presentations; vendor display areas; complimentary buffet & beverages.

Admission to the Tradeshow is free for all attendees who RSVP before Wednesday, February 13, 2008. For attendees who RSVP online or simply come without an RSVP, there will be a \$20.00 charge at the door.

For complete details, visit the Tradeshow website at www.seawtradeshow.com

VIBRATIONS SEMINAR

The SEAW Education Committee will hold a seminar on **March 14, 2008**. "Floor Vibrations - A Critical Serviceability Issue" will be presented by Dr. Thomas Murray. This will be the first seminar in a series focusing on "Floor Systems Serviceability: Design & Construction Issues". Watch for more information in future issues of Equilibrium.

ENGINEERS GONE WILD!!

The 2008 Northwest Conference will be hosted by the SEA of Idaho **July 19-21** in beautiful Sun Valley, Idaho. To view SEA Idaho's *Engineers Gone Wild* promo video, visit <http://www.seaidaho.org/>

Engineering Green: Redefining What it Means to be an Engineer

December 17-18, Nike Campus, Beaverton, OR

Presented by Cascadia Region Green Building Council

This is the premier event for integrating green practices into all types of engineering - from the site to the systems. Equip yourself with the technical knowledge of green engineering practices, and be empowered to integrate those practices into the holistic design process. Event includes internationally recognized speakers, technical trainings, and innovative ideas to engineer a sustainable built environment.

The conference will feature keynote speaker Gary Chris-

tensen, the developer behind the landmark Banner Bank building, which received a LEED® Platinum rating. The innovative workshop topics include Integrating Energy Modeling and Architectural Design, Water Harvesting and Reuse, and Daylighting Metrics.

For the complete line-up, please visit the engineering-green07 website at <http://www.cascadiagbc.org>

Explosion Effects and Structural Design for Blast

March 3 and 4, 2008 St. Louis, Missouri

A 2-day training course at the Embassy Suites Hotel St. Louis Airport

Engineers have an opportunity to improve their skills in understanding explosion effects and designing facilities that are safer to occupants by understanding and minimizing the effects of explosive detonations on structures. Architects, first responders, builders and others will also benefit by understanding explosion effects and protective design methods. Most new

government buildings now require some level of blast resistant design and many facilities require retrofitting to meet anti-terrorism bomb protection criteria; this training will address those requirements. Each participant will receive a certificate indicating 15 Professional Development Hours (PDHs) that can be used to meet continuing education requirements for professional engineers. The course will focus on the fundamentals of explosion effects, determining blast loads on structures, computing structural response to blast loads, and the design and retrofit of structures to resist blast effects. The emphasis will be on terrorist threats from vehicle bombs, but the fundamental concepts can be applied to other explosive scenarios. Currently available software and publications for blast effects and design guidance will be demonstrated and discussed. Much of the design guidance has been restricted distribution to government agencies and their contractors; however specific information on how qualified users may ob-

Continues next page

Meetings/Seminars

tain the software will be provided. Several computer programs for blast effects and blast design have recently been developed by the government for general release and those programs will be discussed along with instructions on how to obtain the software. All of the software and references discussed in this course are available free of charge to qualified users. Participants will gain an understanding of how to compute explosion effects like overpressure and impulse, blast loading on a structure, how a structure responds to blast loading, and practical methods for designing and retrofitting structures to resist blast effects. Participants will be provided with a complete set of class notes. Participants may check in beginning at 7:30 am on March 3 and the course will run 8am to 5pm each day. Lunch and coffee at breaks will be provided for participants each day. More information about the instructors, the course, and accommodations can be found at <http://www.blastdesigntraining.com/>. Secure on-line registration is available. Questions should be

directed to Dr. Sam Kiger at 573-882-3285, KigerS@missouri.edu or Dr. Stan Woodson at 601-636-4429, woodsoneng@netzero.net. For room reservations call 1-800-362-2779 (mention Blast Design Training for a reduced room rate of \$106). The room rate includes breakfast and airport shuttle. A block of rooms will be held for the course until 02/03/2008.

EERI ANNUAL MEETING

February 6-9, 2008
Astor Crown Plaza Hotel New Orleans' French Quarter

"Hurricane Katrina: Lessons for Earthquake Risk Reduction" is the theme of the 60th Annual Meeting of the Earthquake Engineering Research Institute, to be held February 6-9, 2008, at the Astor Crowne Plaza Hotel in New Orleans' French Quarter. It is an extraordinary opportunity to capture lessons from the largest natural disaster in U.S. history. With close to 30 presentations over three days, the

program is designed to appeal to professionals and researchers in the multidisciplinary earthquake risk reduction fields. Sessions cover topics such as restoring critical lifelines after a catastrophe, impacts on the energy sector, offshore infrastructure design, enhancing the resilience of hospitals, scenario-driven catastrophe planning, achievements of 75 years of strong-motion seismology, and responding to and recovering from a large-scale urban event. To view the program and to register, visit <http://www.eeri.org/news/meetings/08AM/>.

2008 STRUCTURES CONGRESS

April 24-26, 2008
Vancouver, British Columbia

The 2008 Structures Congress takes participants north across the Canadian border into

beautiful British Columbia and the vibrant city of Vancouver. Crossing the border has become business as usual for many of us in today's structural engineering industry. Globalization is making international business and professional collaboration prime roads to success. Don't get left behind. Whether you're a practicing engineer, researcher, or academician, you'll want to join us for this Congress to broaden your horizons and gain important insights from world leaders of the industry.

Technical sessions, workshops, tours and exhibits await you at the 2008 Structures Congress. Early Bird Registration available until February 28, 2008. For information, visit www.seinstitute.org.



WANTED: EXPERIENCED STRUCTURAL ENGINEERS!

Are you interested in passing on your engineering expertise?

The 2008 Structural Engineering Refresher Course Committee needs you!

Each year SEAW provides a Structural Engineering Refresher Course to assist those engineers preparing for the NCEES Structural II and Washington State Structural III license examinations. Engineers from the Seattle area present information dealing with everything from masonry and wood to steel and foundations.

Currently, a **Lateral Forces instructor** is needed for the 2008 course, which will run from early August through early September. The Lateral Forces session is usually two evenings, approximately two hours each evening, and takes place at the University of Washington in More Hall.

If you are interested in learning more about the Refresher Course and contributing your teaching skills, please contact Chevy Chase, Committee Chairman, at chevy@cgengineering.com or (425) 778-8500.

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NCSEA Winter Institute February 29 – March 1, 2008

Seismic Design for the 2006 IBC in Regions of Low and Moderate Seismicity

Courtyard & Residence Inn by Marriott, Austin, Texas



Friday, February 29, 2008



Larry Griffiths: *Seismic vs. Wind – Which Controls?*

Oftentimes in low and moderate seismic zones, the design engineer is faced with the question early in preliminary design about whether wind or seismic loads will govern the design. This presentation will focus on this question and offer some guidance on a rational preliminary design procedure to use for a project. Particular attention will be given to important aspects of establishing the structural system as it relates to the design for both seismic and wind loads.

Lawrence (Larry) Griffiths, President of the Structures Division and Senior Principal with Walter P Moore and Associates Inc., Austin, Texas.



Sharon Wood: *Seismic Design Provisions in ACI 318-08*

This presentation will provide a brief overview of the seismic design provisions for reinforced concrete buildings in the 2008 edition of the ACI Building Code. Many of the changes in ACI 318-08 were intended to integrate the detailing provisions for reinforced concrete construction with the procedures used to define the design loads in the International Building Code.

Sharon L. Wood, Robert L. Parker Centennial Professor of Engineering, Department of Civil, Architectural and Environmental Engineering University of Texas at Austin.

Tour of Ferguson Structural Engineering Laboratory and the NEES Equipment Site at the University of Texas

The Ferguson Structural Engineering Laboratory is located on the Pickle Research Campus of the University of Texas at Austin (www.utexas.edu/research/fsel/): Ongoing research at the laboratory is related to the behavior of concrete, steel, and masonry structures, durability of concrete bridges, fatigue of steel structures, fire performance of steel buildings, and nondestructive testing of concrete structures.

The NEES equipment site (nees.utexas.edu) includes three, large-scale, geotechnical shakers, which enable dynamic field testing of soil, foundations, and structures. Tests to date have included studying the sediments in the Mississippi embayment, development of a community velocity model for the Salt Lake Valley Basin, and seismic risk mitigation of port facilities.

Register at www.ncsea.com

Saturday, March 1



Richard Klingner: *Update on the 2008 MSJC Code and Specification*

In this presentation, the changes from the 2005 to the 2008 MSJC Code and Specification are reviewed. Of particular interest will be the seismic provisions, which have been made more transparent and more closely linked to expected performance.

Richard E. Klingner, Associate Department Chair, Department of Civil, Architectural and Environmental Engineering University of Texas at Austin.

Richard Klingner: *Autoclaved Aerated Concrete Masonry: Technical Background, Code Implementation and Design Examples*

Autoclaved Aerated Concrete (AAC) is a lightweight, environmentally friendly material that has just been accepted into the 2007 IBC Supplement for zones of low and moderate seismicity. In this presentation, the technical background behind the structural use of this material is explained; MSJC design and construction provisions for AAC masonry are reviewed; and design examples are provided.



John Henry: *Seismic Design of Wood Structures*

The 2005 Special Design Provisions for Wind and Seismic (SDPWS) and 2005 National Design Specification® for Wood Construction (NDS®), referenced in 2006 IBC and ASCE 7-05, provide design requirements for wood-frame shear walls, diaphragms, members and connections. An overview of key provisions, recent changes, and application to seismic design of wood-frame buildings is provided.

John R. Henry, Principal Staff Engineer with ICC's Business & Product Development Department.



Mike Engelhardt: *Seismic-Resistant Design of Steel Structures and the 2005 AISC Seismic Provisions*

This presentation will provide a brief introduction to the 2005 AISC Seismic Provisions for Structural Steel Buildings, with a discussion of key detailing requirements and an overview of the various seismic load resisting systems in steel. Strategies for seismic-resistant design of steel structures in areas of low and moderate seismicity will be discussed.

Michael D. Engelhardt, Dewitt C. Greer Centennial Professor of Civil Engineering, Department of Civil, Architectural and Environmental Engineering University of Texas at Austin. ■

Opportunities

Staff Engineers



Established and growing Structural Engineering design firm seeks outstanding individuals to fill immediate openings for Staff Engineers in our Seattle/Belltown office. All experience levels considered and encouraged. We're a mid-size dynamic company recognized for our team work, creativity and innovation. Our informal studio setting facilitates collaboration and communication between all staff levels and departments. We combine a very progressive benefits package with a fun, flexible and casual office culture. Our diverse project teams and loyal clients provide opportunities to work

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Email resume to bbresko@swensonsayfaget.com or fax attention Blaze Bresko at 206 443-4870

Structural Engineer

Tyee Consulting is a small, growing engineering firm located in downtown Bellingham. We specialize exclusively in structural design. We have very interesting projects

to work on and great clients to work with.

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Thank you for your consideration!

PAO Structural

Peter A. Opsahl Structural Engineering is a young, dynamic and growing firm located on Capitol Hill, in Seattle. We offer a collaborative, flexible work environment and a competitive compensation and benefits package. Currently, we have the fol-

lowing full-time positions open:

Structural Drafter

Candidate will have more than 4 years of architectural/structural drafting experience, be proficient in Auto-Cad and have experience in drawing standards development. Experience with Port of Seattle standards a plus.

Structural Engineer

Candidate will have 4-5 years of experience, excellent written and oral communication skills, excellent multi-tasking ability, and extensive experience in client communications and project management. Professional registration as a Structural Engineer in Washington preferred.

Senior Structural Engineer

Candidate will have at least 8-10 years of experience,

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Opportunities

excellent written and oral communication skills, excellent multi-tasking ability, and extensive experience in client communications and project management. Professional registration as a Structural Engineer in Washington is required. Ownership opportunities in the Company will be available to the ideal candidate.

Please email hr@paostruc.com with a letter of interest and a resume.

Engineers

Seattle Structural

Seattle Structural PS Inc is a downtown Seattle firm looking for engineering candidates at all experience levels. Share in our vision of client-based service and hard

working enthusiasm on diverse and challenging projects in the US and overseas. Join our collaborative staff of 10 in one of Seattle's most vibrant office towers, specializing in public, commercial, retail, industrial and specialty projects. We offer excellent benefits and stimulating work in a casual environment. Visit our website at www.SeattleStructural.co

Send resumes to: Pete Pawlak, PE 1420 Fifth Avenue, Suite 425, Seattle, WA 98101

206-343-3000 phone; 206-343-3013 fax; PPawlak@SeattleStructural.com

Structural Engineer

Casper, Phillips & Associates (CP&A), Tacoma, Washington, USA has an immediate opening for a structural engineer, MS, PhD, or equivalent, a minimum of 5 years design

and CAD&D experience, and a record of being a team player and self-starter. Visit casperphillips.com for examples of our small firm's typical projects and clients. Salary open. Contact bill@casperphillips.com.

Sr Structural Engineer

KH₂A Engineering in Portland, Oregon is seeking a senior structural engineer. Our projects are typically industrial in nature ranging from steelmaking and wood products to chemicals production. Ongoing projects in Russia and Bolivia add an international flair to the backlog. Applicants should have a bachelor's degree in civil engineering with structural emphasis and licensure in Washington, Oregon and California. 401(k), health

HELP WANTED ADS are accepted through the fourth Friday preceding the publication month. The cost for text ads is \$50 per insertion **pre-paid**, with a 10% discount for ads running two or more consecutive months. Ad copy should be limited to 2000 words or less and must be submitted by e-mail. Advertising order forms and information about display advertising, can be found on our website at:

http://www.seaw.org/resources_newsletter.cfm

Or request by e-mailing seaw@seaw.org.

Help wanted ads must be purchased through the newsletter to be included in the SEAW online job board.

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Parker, Messina & Associates, Inc. Consulting Engineers

- Structural Design Engineer & Project Engineer
- AutoCAD Structural Designer

Parker Messina & Associates is a multi-discipline engineering firm located in Federal Way, WA. We provide engineering study and design services to industrial, manufacturing, utility and municipal clients. Recent projects include bio-diesel, ethanol, petro-chemical, titanium, power generation, pulp & paper, wood products and food products facilities.

Candidates for engineering positions should have excellent technical, design and communications skills, 6 to 10 years experience and a working knowledge of IBC06/ASCE7. Industrial experience and a Washington PE license are highly desirable.

Designers should have experience in CAD drafting of structural steel and reinforced concrete for industrial, manufacturing and utilities projects.

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We're hiring. Email your resume
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Opportunities

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Structural Engineers

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