CONNECTIONS

October 2011 Volume 12 Issue 3

Newsletter of the Structural Engineers Association of Oregon

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Upcoming SEAO Meetings and Events:

November 16, 2011: SEAO Lunch Meeting
Speaker: Ashraf Habibullah, S.E., Founder, President and CEO of Computers and Structures, Inc. (CSI)
Topic: Structural Engineering - The Profession, the Grandeur and the Glory.
Location: Governor Hotel, Portland / 11:30 am check-in, 12:00 pm lunch and program.
See Page 3 for additional information.

January 25, 2012: SEAO Lunch Meeting
Speaker: Ed Huston, PE, SE. Principal at Smith & Huston Consulting Engineers in Seattle, WA & former President of the Board of Directors of NCSEA.
Topic: Specifying Wood & Cold-Formed Steel Trusses—Avoiding Pitfalls & Unnecessary Liability.
Location: Governor Hotel, Portland / 11:30 am check-in, 12:00 pm lunch and program.

February 10 - 11, 2012: NCSEA Winter Institute
Location: Hotel Monteleone, New Orleans, LA
Topics featured: Soft Soil – Water and Wind
Visit www.ncsea.com for additional information and registration.

February 23, 2012: Save this date for the SEAO Tradeshow.

March 1, 2012: SEAO Spring Seminar
Location: Embassy Suites, 9000 SW Washington Square Road, Tigard, OR
Time: 8:30 am to 4:30 pm
Topic featured: Seismic Design Manual III
More information is to come in next month's newsletter/calendar.

July 26-28, 2012: SEA NW Conference
Location: Kah-Nee-Ta Resort & Casino, Warm Springs, OR.
Theme: Shake It Up Again: Gambling with Seismic Vulnerability
See page 6 for conference committee information.

CONNECTIONS is a monthly publication of the Structural Engineers Association of Oregon, published to disseminate current news to our membership and others involved in the profession of structural engineering. The opinions expressed reflect those of the author and, except where noted, do not represent a position of SEAO.

Send membership inquires to:

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PRESIDENT'S MESSAGE: STRUCTURAL ENGINEERING: A SERVICE OR A COMMODITY?

By: Ed Quesenberry, P.E., S.E.

I recently had the honor of attending the NCSEA Conference in Oklahoma City as an Alternate Delegate for SEAO. In addition to the delegate meetings and technical sessions, there were many opportunities to talk with Structural Engineers from other parts of the country about all aspects of engineering practice. Most conversations eventually veered toward discussing the impacts that the sluggish economy is having on firms and business practices. By far the biggest complaint I heard was about the downward pressure on design fees that seems to have been pervading the A/E community in the last couple of years. I lost count of the number of times I listened to stories about firms losing projects with established clients because a competitor came in with a ridiculously low fee. We are not talking about 10 percent lower, we are talking 40 to 50 percent lower. On one hand, it was nice to know that I was not alone in experiencing this recently, but on the other hand the frequency that I heard the story was quite alarming. It seemed to be a consensus that current market pressures on our fees are being exacerbated to some extent by drastic fee cutting within our own profession. Simply put, we are partly to blame for the rise in demand for lower fees for our own services. Drastic fee cutting may be a short term tactic employed by firms trying to maintain cash flow or to attract new clients, but I am concerned that the more pervasive it becomes, the more long term damage it will do to our profession.

In his talk at the October 26 SEAO meeting, Dan Cuoco, Editor of Structural Engineer magazine, confirmed that drastic fee cutting is happening across the country. Dan listed three negative impacts that fee cutting is having on our profession:

1. Causes Firms to reduce man hours spent on project and to most likely lose money on the project
2. Puts firm in poor position when economy rebounds
3. Lowers the bar and further commoditizes our profession

It is the last of these that concerns me the most. *Investopedia* defines a commodity as, "A basic good that is interchangeable with other goods of the same type. Quality may differ between goods, but is essentially uniform across producers." Commodities such as sugar or salt have only one main distinguishing characteristic that influences consumers to buy them: price. The consumer generally doesn't care where sugar comes from, who harvested and refined it or what the process was to create it. If and when the price is right, the commodity will be bought.

In contrast to the commodities market, Structural Engineering firms traditionally build their market share through forging strong client relationships and a portfolio of projects and they leverage these along with their capabilities and qualifications to secure work. The practice of fee cutting resets clients' expectations by making fees the primary factor distinguishing one consultant from the other instead of qualifications, reputation and integrity, leading to the commoditization of our services. Simply put, the more structural engineering services are seen as goods, the less value they will hold in the marketplace. Every time significant fee cutting occurs, it chips away at the foundation of our profession; our collective integrity in the eyes of our clients.

I don't want to sound like Chicken Little here, nor do I want to give the impression that I have not sharpened my pencil on fees a few times recently. I am a firm believer that competition is essential to a vibrant marketplace, and that when times are tough, we all have to tighten our belts in order to remain competitive. I am also hopeful that the practice of drastic fee cutting is a product of the current economic situation, and will become less prevalent as the economy recovers. However, the more fee-based selection gets a foothold in our profession today, the less we will be able to base our livelihood on our qualifications, experience and client relationships tomorrow. Contractors have been battling commoditization for years and have had to develop project approaches such as design/build, CM/GC, and design assist as a means of distinguishing themselves from their competition. As Structural Engineers, we can learn from some of the more successful general contractors around us and find ways of preserving and marketing our professional integrity rather than abandon-

(Continued on page 16)

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NOVEMBER LUNCH MEETING ANNOUNCEMENT

Sponsored by: Contech Services, Inc.

Wednesday, November 16, 2011

Topic: Structural Engineering – The Profession, The Grandeur and The Glory

Ashraf Habibullah will present a fun, informative talk covering a wide range of topics. He'll discuss structural engineering as a profession, the importance of image and perception and the state of art in software developments. He will also cover what it takes to create an impact in a competitive global economy, the connection between engineering and the arts and the exciting impact structural engineers have every day on the lives of people throughout the world.

In his talks, Ashraf aims to create a mainstream appreciation for the profession by leveraging the powerful positive social and economic aspects of structural engineering. He reminds us to be aware of the ways that structural engineering brings art, form, and function to our everyday lives and how it is because of structural engineering that monuments reflecting the grandeur of humanity—such as the Burj-e-Khalifa in the U.A.E. and the new One World Trade Center in New York—can exist.

Ashraf will also talk about the oft-overlooked artistic aspects of engineering and how his own passion for the arts has helped fuel his professional endeavors. Ashraf is co-founder of Diablo Ballet, a critically acclaimed, San Francisco Bay Area-based professional dance company. He is also the founder of Engineers Alliance for the Arts, an organization that involves school children with technology, focusing on the artistic aspects of structural engineering.

Location and Times:
Governor Hotel, 2nd Floor, Billiard Room
614 SW 11th Ave, Portland OR
The MAX Light Rail System stops just a block away from the hotel (The Galleria stop) and Portland's Streetcar stops right outside the hotel. Smart Park is located at SW 10th and Yamhill about two blocks from the hotel.

Check-in: 11:30 am
Lunch and Program: Noon, webcast begins at 11:50 am

Cost: Dinner & Program	**Cost: Videocast Locations**
$32 – Pre-paid Members	$20 – Members
$40 – Pre-paid Non-members	$33 – Non-members
$18 – Students	$13 – Students

Videocast Venues:
Corvallis: CH2M Hill, 1100 NE Circle Blvd., Suite 300, (541)752-4271
Medford: Marquess & Associates, 1120 East Jackson Street, (541)772-7115
Bend: Eclipse Engineering, 155 NE Revere Avenue, Suite A, (541)389-9659
Eugene: Artisan Engineering, 325 West 13th Avenue, (541)338-9488

Reservations:
Pre-registration required. **You can register and pay online at** www.seao.org **before noon, Friday, November 11.** You can also register with Jane Ellsworth via phone at (503) 753-3075 or via Email: jane@seao.org. Note: No-shows will be billed.

PDH Credit: One PDH has been recommended for this program

About the Speaker: Ashraf Habibullah, Registered Civil and Structural Engineer, is President and CEO of Computers and Structures, Inc. Ashraf graduated from the University of California at Berkeley in 1970 with a master's degree in structural engineering. He founded CSI in 1975. Today, CSI is recognized globally as the pioneering leader in the development of software tools for structural and earthquake engineering. The software is used by thousands of engineering firms in over 160 countries for the design of major projects, including the new One World Trade Center in New York, the

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NOVEMBER LUNCH MEETING ANNOUNCEMENT

(Continued from Page 3)

Burj-e-Khalifa in Dubai, the 2008 Olympics "Bird's Nest" Stadium in Beijing and the Centenario Bridge over the Panama Canal. CSI products are also recognized as the standard tools for research and education worldwide and CSI has donated software to thousands of universities for teaching purposes. Through these donations, CSI has helped to ensure that the technology necessary to produce seismically-sound structures reaches developing nations. Ashraf has led the development of CSI's products for nearly four decades.

Meeting Sponsor: Contech Services, INC

CONTECH
CONTECH SERVICES, INC.

Don Ellsworth and his two partners founded Contech Services in 1993. Licensed in seven Western states, they are specialty contractors in the field of:

CONCRETE REPAIR, RESTORATION, STRENGTHENING & WATERPROOFING

More specifically:

- FRP Composite Systems
- Epoxy Injection
- All Types of Grouting with Cements, Epoxies & Chemical Grout
- Expansion Joint Systems
- Elastomeric Urethanes & Sealants
- Plate Bonding
- Soil Stabilization & Slab Jacking
- And . . . Other Unique Applications

Don is a past President for Oregon's ACI Chapter as well as a former and present SEAO Board member and is happy to be this month's sponsor. You can learn more about Contech Services at www.contechservices.com.

YOUNG MEMBER FORUM

COME SEE WHAT SEAO YMF IS ALL ABOUT!!!!!!

The Young Member Forum looks to give young structural engineers a forum for professional networking and development along with community outreach. Our mission is to reach out to students interested in structural engineering and encourage future participation within SEAO committees and activities. Our events are designed to promote an exchange of experience and knowledge amongst our members in a social environment.

Each month, we gather for an informal happy hour after work. The gatherings are typically held towards the end of the month at:

Lucky Labrador Beer Hall
1945 NW Quimby Street
Portland, OR 97209)

Friends, co-workers, and significant others are welcome to attend!
This year the YMF is setting goals to put together a program that outreaches to local high school students to inform and spark an interest in structural engineering.
If you would like to join our committee, have suggestions/comments about events, have a desire to help in any way, or have questions about YMF, please contact:

Aaron Rudis (aaronx.v.rudis@intel.com) or Lainie Stambaugh (lainie.stambaugh@kpff.com).

We would love to hear from you!

CITY OF PORTLAND TITLE 24.85–CLARIFICATIONS AND POLICIES

By: Amit Kumar, PE, SE

First adopted in 1994, Portland City Code Chapter 24.85 "Seismic Design Standards for Existing Buildings" contains requirements for upgrade to the lateral systems of existing buildings when the buildings are undergoing change of use or occupancy or are being altered. In addition, for Unreinforced Masonry Buildings (URM's) undergoing alterations or repair, Title 24.85.065 has triggers associated with the cost of repair or alteration which, if exceeded, would require mandatory seismic strengthening.

In 2004, Title 24.85 underwent a major revision. This revised version adopted in October 2004, serves as the governing code for seismic design for existing buildings.

Based on feedback received over years of use of these provisions, the following are some common clarifications and City of Portland policies.

1. **What is meant by ASCE 31 Seismic Improvement standard?**

   Answer: Some provisions of Title 24.85 require buildings be upgraded to ASCE 31 standards. This refers to a limited upgrade of buildings where deficiencies identified by an ASCE 31, Tier 1 and Tier 2 analysis for Life Safety Performance Level criteria are required to be mitigated or upgraded. The upgrade shall meet or exceed the requirements of the latest edition of the Oregon Structural Specialty Code (OSSC) with reduced force levels. The reduced force shall not be less than 75% of the prescribed forces in OSSC.

   Alternatively, in lieu of the OSSC, ASCE 41 may be used. When upgrading using ASCE 41, BSE1 Earthquake hazard level with performance levels as follows shall be used. For buildings in occupancy category I and II, the performance level shall be Life Safety (LS). For buildings in occupancy category IV, the performance level shall be Immediate Occupancy (IO). For occupancy category III, the performance level shall be halfway between the performance level for category II and IV buildings. The design spectral response acceleration parameters S_{xs} and S_{x1} specified in ASCE 41 shall not be less than 75% of the respective design spectral parameters S_{ds} and S_{d1} as defined in OSSC.

2. **When an existing building undergoing a change of occupancy or change of use is required to be seismically upgraded due to provisions of section 24.85.040, and this change involved multiple or mixed occupancies, what seismic improvement standard is required by Title 24.85.040?**

   Answer: In general, the relative hazard classification (see table 24.85-A) that corresponds to the occupancy classification with the majority of the occupants added to the building determines the seismic improvement standard required for change. However, if the change in occupancy includes areas which are changing to occupancies that are classified into hazard levels 4 and 5 in table 24.85-A of Title 24.85 and if these occupancies add more than 150 people or take up more than 33% of the net floor area then, the seismic improvement standard shall be current code as defined in Title 24.85. This is irrespective of whether these occupancies constitute a majority of the occupant load or not.

3. **When Title 24.85 underwent a revision in 2004, it incorporated monetary triggers associated with the cost of repair or alteration of URM buildings which, if exceeded, would require mandatory seismic strengthening. Furthermore, these dollar figures are required to be adjusted annually. What are the current monetary triggers?**

   Answer:: When revised in 2004, Title 24.85 established cost triggers which if exceeded would require mandatory seismic strengthening. These triggers were set at $40 per square foot for a single-story URM building and $30 per square foot for two stories or greater. For URM buildings with special hazards, the limit is set at $30 per square foot regardless of the size. These triggers are to be adjusted annually by construction cost index. Adjusting for costs from 2004, currently the dollar figures are $51.08 for single story URM and $38.31 for two stories or more and for URM buildings with special hazards. These triggers are usually adjusted in January each year using the RS means construction cost index.

4. **Section 24.85.065(B) states ". . . When the cost of alteration or repair work which requires a building permit in a 2 year period exceeds the following criteria, then the building shall be improved to resist seismic forces such that the entire building conforms to the ASCE 31 improvement standard." When does the two-year period to determine the costs of permits begin and end, and what permits need to be counted?**

   Answer: At the time an application is submitted for a permit (any permit) on a Unreinforced Masonry Building, the valuation of all "issued" permits from two years prior to the date of application of the current permit, including the valuation of the current permit, shall be added up to determine the total cost. These costs minus any costs allowed to be deducted per section 24.85.065B(3) shall be used to determine if any of the triggers in section 24.85.065 are exceeded. If revision permits are part of the issued permits in the

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CITY OF PORTLAND TITLE 24.85–CLARIFICATIONS AND POLICIES

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two-year period described above and these revision permit valuations add to the value of the original permit, then, in addition to the valuation of the revision permit, the valuation of the original permit shall be included in the costs for the purpose of determining if any seismic triggers are exceeded.

5. **Can exclusions allowed under section 24.85.060 like mechanical, electrical, and plumbing work be excluded from the costs used to determine if seismic upgrade is required under section 24.85.065?**

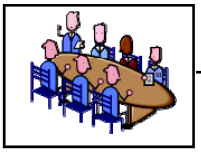
   Answer: No. Exclusions listed in section 24.85.060 do not apply to seismic triggers when determining if seismic strengthening of URM buildings is required under provisions of 24.85.065. Mechanical, electrical and plumbing work cannot be excluded from the cost calculations. The only exclusions are listed in 24.85.065B(3). Exclusions listed in section 24.85.060 apply only to costs used to determine if a seismic evaluation of a building is required.

6. **How is the valuation of the work confirmed for the purposes of determining if seismic strengthening is required by section 24.85.065(B)?**

   Answer: For all work requiring a permit in Unreinforced Masonry buildings, an estimate for all work proposed in the permit, prepared by an independent professional and licensed estimator or other established estimators acceptable to BDS must be submitted along with the application. The estimate must provide a detailed estimated cost for the entire scope of work proposed including cost for the work that can be excluded per section 24.85.065B (3) of Title 24.85. The final valuation will be the total value minus the excluded costs. The valuation should reflect the fair market value of all labor and material costs. At the discretion of the Bureau Director or his designee, an independent third party estimate may be waived if the estimated valuation from the applicant is less than 60% of the seismic trigger amounts and if the Director or his designee is satisfied that the proposed valuation appears to be appropriate for the scope of work being proposed. The costs for preparing and providing the estimates are the responsibility of the applicant.

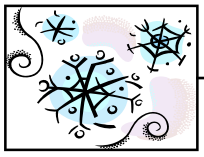
If there are questions or further clarifications required, please contact Amit Kumar, Sr. Engineer, Bureau of Development Services, City of Portland via email at amit.kumar@portlandoregon.gov.

COMMITTEE UPDATES



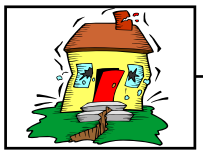
2012 SEA NORTHWEST CONFERENCE COMMITTEE

The NW Conference Committee currently meets once a month. We are tentatively meeting the first Wednesday of the month. As we get closer to the conference, we will meet more frequently. We have six members on individual subcommittees. We could use two to three more people to help with the other subcommittees. The conference will be held at the Kah-Nee-Ta Resort in Warm Springs, Oregon on July 26 -28, 2012. The theme for the conference is "Shake It Up Again--Gambling with Seismic Vulnerability". It promises to be a fun and informative event. If you are interested in being part the committee, please contact: kevin@miller-se.com.



SNOW LOAD COMMITTEE

The Snow Load Committee is beginning the first review of the electronic map prepared by OSU over the next few weeks.



SEISMIC COMMITTEE

The Seismic Committee continues to meet on a monthly basis. Our current efforts include the review of ASCE 7-10 in order to provide comments and recommendations to the State of Oregon's Structural Code Review Committee by the end of March 2012, for inclusion into the 2013 OSSC as well as continued exploration into public outreach opportunities. One opportunity includes engaging Portland Public Schools in concert with the Portland AIA to facilitate an upcoming bond measure effort. Our next meeting on Wednesday, November 9, will focus on our ASCE 7-10 review. A general Committee meeting will follow on Tuesday, December 14. If you have any questions, please contact: jason.thompson@kpff.com.

OCTOBER MEETING RECAP

By: David Tarries, P.E

Issues Facing Our Profession

By Daniel Cuoco

Daniel is a former president of Thornton Tomasetti and is currently the Editor-in-Chief of ZweigWhite's *Structural Engineer* Magazine. He holds a BA in Civil Engineering from the City College of New York, an MS in Civil Engineer from New York University, and a MBA from Adelphi University. He presented on some of the common concerns facing structural design in the current challenging economy at the October dinner meeting.

In 2008 ENR's top 500 Design firms reported a total revenue of $90 billion. In 2010 that value had reduced by 12%. In 2008 those same firms reported $70 billion from work within the United States. In 2010 that number dropped by 15% but revenue from work outside the US had risen by almost 6%. This data suggests that firms are starting to look outside our borders for growth.

Most firms have "tightened their belts" over the last two years of economic downturn. This tightening has included any combination of the following:

- Cutting discretionary spending
- Reducing payroll
- Target reduced profits
- Increase marketing/business development
- Pursue work selectively
- Take advantage of downtime with needed overhead tasks

Firms have also used this slow period to improve their business. The following are examples of opportunities resulting from a down-turned economy:

- Acquisition of senior level staff
    - More desirable employees not normally available
- Acquisition of other firms
    - Diversify
    - Expand geographically
    - Supplement and/or upgrade staff

These changes in the engineering landscape bring to mind a number of questions. Will small and midsize firms be able to compete with mega-firms? Will there still be a need for specialized firms? Should small firms sell to big firms? Small firms may choose to sell to larger firms when facing financial hardships. There are many things to consider when making this decision:

- Is the culture of the other company similar?
- Does the merger lead to future opportunities?
- Will the firm keep its name?
- Is there a favorable negotiating position?
- Are there opportunities for current employees?
- What will happen to existing clients?
- Is there an ownership transition plan?

As many firms struggle to stay afloat in a downturned economy, they can resort to business practices that negatively affect the future of the industry. The following are examples of ways that companies can get into trouble:

- Firms can ask for unrealistically low fees to beat out competition and obtain work. They are then forced to reduce manhours to meet budget and the quality of work suffers. When the economy rebounds the clients will still expect the same fees and our services become further commoditized.
- Firms can do more work up-front perusing work, such as bidder design projects. Design consultants should expect to be paid for their services where there is an unacceptable risk that a paying contract will not be acquired.
- Owners and clients can manipulate an industry hungry for work in their favor by unfairly shifting risk to the design team. The can add provisions to contracts that can easily result in claims and often they are not covered by professional liability insurance. The following are some deal breakers that are found in contracts:
    - Indemnification not tied to negligence.
    - Use of the "highest standard of care" instead of industry standards.
    - Mention of guarantees or warranties.

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OCTOBER MEETING RECAP

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Firms can use specialized approaches to contract interpretation to avoid unknowingly entering into an unfair contract. These include:

- Senior in-house staff reviews and training of project managers to understand contracts.
- Employ in-house legal counsel.
- Employ outside legal counsel.
- Ask the firms insurance carrier to review.

An unfair contract does not necessarily mean a job must be declined. There are a number of ways firms can approach unfavorable contract issues that result in favorable conditions.

- Modifications to the contract can be suggested.
- The client/owner can be advised that provisions in the contract are uninsurable.
- A letter could be provided by the insurance carrier indicating uninsurable terms.
- The firm's legal counsel could contact the owner's legal counsel and discuss the issues.
- As a final resort, a difficult business decision must be made: Decline the work, require additional fee commensurate of the risk, or obtain a limitation of liability to cap claims.

At times, even a firm with a solid risk management plan can become involved in an unfavorable contract when one of the following occurs:

- The architect has already signed the prime agreement and wants to pass on risk to the design team.
- The other members of the design team have already signed the contract.
- The signing parties assume that the terms of the contract are standard and "what we always do".
- The architect has minimal liability insurance leaving the firm as the main target should claims arises.
- Design work has already started and the contract must be signed to obtain payment.

Requests for releases or waivers by contractors at project sites have become more and more common. An engineer could be required to sign a release to be allowed on a job site. This can pose a risk to the firm and to the employee. It is best to inform employees that the firm does not allow them to sign away their rights and that a compromise must be reached before site inspection can commence.

Another pitfall of professional practice today is lawsuits based on claims that have nothing to do with a firm's professional practice and expertise, but instead are only looking for a payout from a deep pocket. An example is the lawsuits involving the World Trade Center after September 11th. Approximately 20,000 plaintiffs sued the City of New York, the contractors, engineers, and others involved with rescue and clean-up efforts. The plaintiffs ranged from uniformed and non-uniformed NYC workers to contractor employees, volunteers, and self-employed individuals. The City was unable to secure insurance to cover people working at the site and people and their lawyers began looking for compensation for ailments reportedly related to work at ground zero. A number of large design firms were included in those lawsuits as a result of their net worth and liability insurance. Some of the firms involved included Thornton Tomasetti, Arup, and Skidmore, Owings & Merrill among others. The lawsuits claimed that the engineers were professionals and had control of the site and did not properly warn workers of the health hazards present. The suits also did not discriminate between a paid professional service and a volunteer effort and/or emergency response effort. Many of these lawsuits have resulted in settlements, but others are still in the courts in New York City. The experience of those firms has highlighted the need in this country for emergency responder legislation and better Good Samaritan legislation. These laws are needed to protect design professionals who offer their services, free or paid, in response to natural disasters from unfounded litigation involving work outside their area of expertise.

Daniel's presentation covered many areas that firms across the nation are struggling with today. In these difficult economic times it is more important than ever that firms watch their bottom lines and avoid costly litigation. It would benefit all SEAO members, not just principals and managers, to consider these common industry issues.

SEISMIC QUIZ

This seismic quiz has been put together by the Seismic Committee of SEAO. This month's quiz is focused on Concrete. Enjoy!

1. Regardless of steel reinforcement, what is the maximum value that can be taken for the nominal shear strength capacity of a special reinforced concrete shear wall?

2. What type of steel reinforcement must be provided in special reinforced concrete moment frames and special reinforced concrete shear walls and coupling beams?

3. What is the appropriate strength reduction factor for concrete diaphragm design in a building with shear-controlled concrete shear walls?

4. What is the maximum permitted building height for a regular building with multiple well-distributed lines of special reinforced concrete shear walls in SDC D?

5. For coupling beams in special reinforced concrete shear walls, when are groups of diagonal bar reinforcing required?

6. True or False: All boundary steel can contribute to the shear strength of the wall.

See Page 16 for answers.

OSU CLASSES

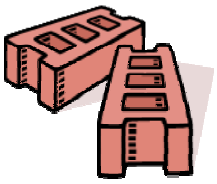
PRESTRESSED CONCRETE DESIGN CLASS
SPONSORED BY KNIFERIVER AND OREGON PRECAST CONCRETE INSTITUTE

CE 408/508 or CE 808 - Prestressed Concrete (3 credits)
Prerequisite: course in reinforced concrete design
Instructor: Dr. Keith Kaufman of Kniferiver
Winter Term: 6 to 9 PM on Tuesdays starting January 3rd in Kearney Hall 312 at OSU.
Course is also available as a regular university course (CE 486/586) if you are pursuing a degree.

MASONRY DESIGN CLASS
SPONSORED BY MASONRY INSTITUTE OF OREGON

CE 408/508 or CE 808 - Masonry Design (3 credits)
Prerequisite: course in reinforced concrete design
Instructor: Sue Frey of CH2M-Hill
Winter Term: 6 to 9 PM on Thursdays starting January 5th in Kearney Hall 205 at OSU.
Course is also available as a regular university course (CE 482/582) if you are pursuing a degree.
Also, note that the masonry design course is available on-line in the e-campus version (CE 408/508 or CE 808) including videos, and does not need to be an on-site attendance class.

NOTE: CE 408/508 are undergraduate and graduate workshops. CE 808 is the least expensive option and is a professional workshop, not applicable to a degree. Cost for CE 808 is $175 for each 10 week course for continuing education students. PDH credits can be earned.



Admission information: http://ecampus.oregonstate.edu/services/admissions/
Registration information:
http://ecampus.oregonstate.edu/services/registration/register.htm
Students need to apply for admission and register before the start of the term to avoid late fees.
CRN for CE 808 (Masonry) = 36966
CRN for CE 808 (Pres. Conc.) = 37077

Questions? Please contact Prof. Tom Miller at OSU at (541) 737-3322 or thomas.miller@oregonstate.edu.

NEW LIFE MEMBER

The SEAO Board of Directors is pleased to announce the selection of ***Bruce Holliday*** as a Life Member. Bruce has a long history of involvement with the SEAO and the architectural and engineering communities. Bruce began working in the construction industry in 1982 as a Territorial Manager with Adhesive Engineering. He joined SEAO as an Associate Member that same year and was mentored on the fine points of structural engineering by Eric Hayford. A year later Bruce began working with the Programs Committee collecting money at dinner meetings and serving as booth coordinator for the Western States Conference. In 1988, Bruce was approached by Fred Van Domelen and Roger McGarrigle, the incoming President, to take over the total dinner meeting package, to include taking the money, finding new locations and providing new and exciting programs to grow the meeting attendance figures. By rotating meeting locations and bringing in technical experts, meeting attendance grew from an average of 30 to above 80.

Bruce has served as a Director on the SEAO Board twice, from 1997 to 1999 and again from 2004 to 2006. He was also a member of the Historical Building Committee for several years, providing solutions for concrete and masonry problems.

Bruce has been instrumental in making the SEAO Scholarship Foundation the success it is today. The scholarship began with a small proposal from Paul Fujimoto in 1986 and became formalized under the direction of Dick Imper, Pat Hynes and Ray Miller. To keep this effort sustainable, Bruce first proposed the idea of a Trade Fair to Pat in 1988. The Trade Fair quickly became a well received, annual event and has provided a large amount of the income to the fund.

Bruce has also been invaluable to SEAO in financial matters. From negotiating with the IRS to keep our non-profit status, filing applications to create the Foundation as a 501(c) 3, to keeping the Board apprised of changes in the tax code, Bruce fills a void most technical organizations have related to accounting. He is also donating his services keeping the financial records and bookkeeping for the Scholarship Foundation.

Bruce continues to provide consulting services related to concrete repair in much of the Western United States.

SEAO truly appreciates the countless hours of service Bruce has provided to our organization and his contributions to our industry. Thank you and congratulations, Bruce Holliday.

STRUCTURAL MASONRY DESIGN WEBINAR

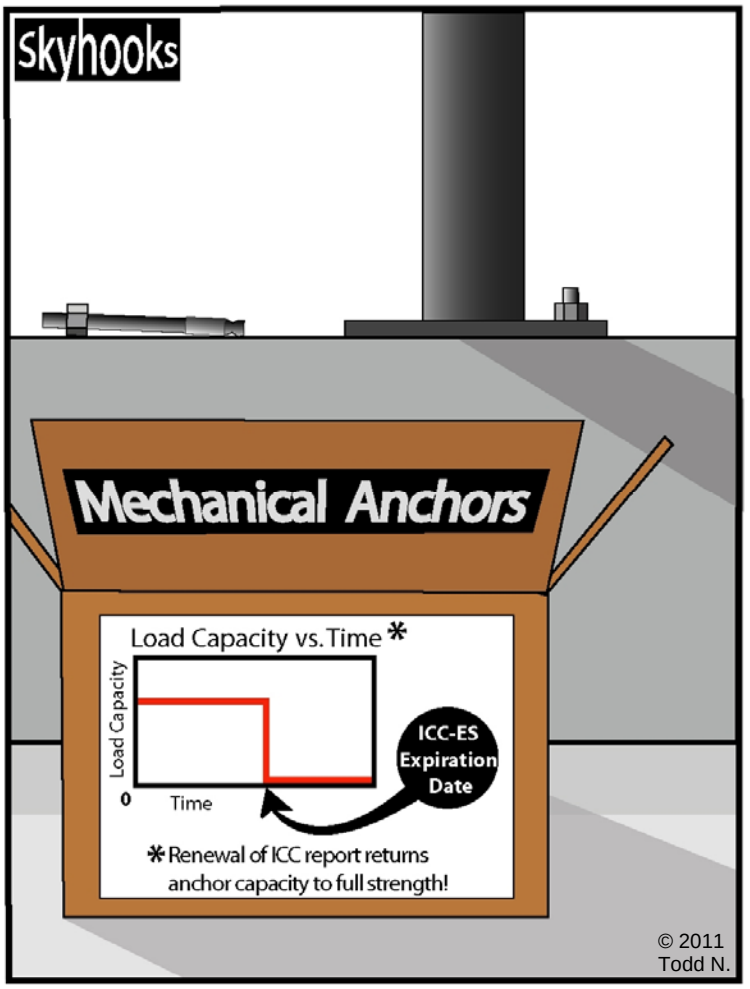
The Northwest Concrete Masonry Association will be conducting a three-session webinar focusing on the design of reinforced concrete masonry construction. Both working stress and strength design methods of the 2009 IBC and 2008 MSJC codes will be covered.

The updated webinar will cover design examples of masonry building elements by manual and automated methods. It is aimed at practicing engineers who want to learn how to design masonry in a practical and efficient manner.

Continuing education credit (up to 7.5 PDH) can be earned. Certificates of attendance will be issued.

The webinar dates are:
November 29th, December 6th and December 8th, 2011
Each session will run from 4:00 - 6:00 pm Pacific Time
See attached brochure for additional information.

Also, additional information can be obtained from the Northwest Concrete Masonry Association at 425.697.5298 or www.nwcma.org.



2011 Western Council of Structural Engineers Associations (WCSEA) Meeting
October 20, 2011: Oklahoma City

Western Council member organization websites:

SEAI: http://www.seaidaho.org
SEABC: www.seabc.ca
SEAW: http://www.seaw.org
SEAO: www.seao.org
SEAMT: www.seamt.org
SEAOH: www.seaoh.org
SEAOA: www.seaoa.org

Sue Frey and Ed Quesenberry attended the 2011 SEA Western Council Conference held in Oklahoma City just prior to the NCSEA annual conferences voting delegates representing SEAO. Delegates of SEAs from Washington (state section), Idaho, Montana, Oregon, and Arizona were present. Delegates from Hawaii and British Columbia were unable to attend.

Don Scott, WCSEA's representative to ATC, reported on ATC activities. WCSEA has one representative on the Applied Technology Council representing all the western council member organizations. ATC Website: www.atcouncil.org

Delegates from the member organizations shared resources and information relative to Western states including:

- Review of council financials
- Reports on last year's organization activities
- Recommendations for technical resources, including successful meeting speakers and seminar topics
- Discussions on licensing board changes and activities and exams in the member Western states
- Comparison of activities of younger member forums and activities
- Continuing education requirements (WA state will probably require PDHs in a year or two)
- Officially allowing WCSEA members from any state to attend webinars and seminars and meetings at hosting SEA member price

WCSEA Member States Snow Committees:
Montana has developed a data program that they will make available to other SEAs at a low price. SEAs of Oregon, Washington, Idaho and Montana all are working on snow load updates for their states and will now compare data and info. Contact the snow load committee chair from each of these SEAs.

Meeting dates and locations (as of 2011 meeting):

* All members of WCSEA organizations meet every three years at a Western Roundup Conference
** NWSEA Conference is held in non-Roundup Conference years (2 of 3 years)
*** WCSEA meets at NCSEA meeting site except years of Roundup Conferences
2010 Western Council Roundup held in BC
2011 Western Council meeting held in Oklahoma City prior to NCSEA conference
2012 Western Council meeting to be in St. Louis prior to NCSEA conference
2013 Western Council Roundup to be held in Hawaii (No NWSEA Conference)
2014 TBD prior to NCSEA conference
2015 TBD prior to NCSEA conference

CONFERENCE RECAP

2011 NCSEA Conference

October 20-22, 2011: Oklahoma City

By: Ed Quesenberry, P.E., S.E.

The 19th annual National Council of Structural Engineers Associations (NCSEA) Conference was a well-attended 3 day event that convened on the morning of October 20 with a series of Committee meetings. Sue Frey, Delegate representing SEAO, attended the Licensing Committee and Code Advisory Inspection Services/Quality Assurance Committee meetings while I attended the Basic Education Committee meeting as an Alternate Delegate observer representing SEAO. Other committees that met concurrently were Advocacy, Code Advisory on Wind Engineering, and Code Advisory General Engineering.

Sue has been deeply involved in the Licensing Committee for the past few years and has been integral in the development of NCSEA's position paper on national licensing for structural engineers. At the meeting, Sue shared a comprehensive matrix that provides each state's current licensing requirements for PEs and SEs, including recent and current exam requirements. Many states do not have separate licensing requirements for SEs, and NCSEA has developed a position paper supporting SE licensure in all states and territories. NCSEA has positioned itself to assist member organizations with this effort through guidance support. In the afternoon, Sue was able to provide input from the SEAO Special Inspection Committee, which generates the tables, notes and commentary on our webpage to the NCSEA corresponding committee and participated in their review of special inspection requirements for metal decking. This committee is working to remove IBC Chapter 17 from the ICC document and maintain it as a separate standard, as a standard can more easily updated and maintained.

The Basic Education Committee has been having dialog with structural engineers and college educators since 2002 in an effort to develop a program of course work, training and testing that will help to ensure that graduates concentrating in structural engineering meet certain competency requirements before entering the workforce. Surveys were sent to many universities with Civil Engineering curricula and the survey information was used to prepare the recommended minimum requirements. The surveys show that many schools have not been in a position to offer courses in timber or masonry design and some allow graduation without a basic course in steel or concrete design. Influencing higher education curricula is a daunting task, but the committee felt it to be important to the profession as a whole. The Committee meetings were followed by afternoon presentations on professional ethics and public relations and social time in the vendor tradeshow.

Technical presentations that took place throughout day 2 of the conference, and across the board, were very interesting and informative. Distinguished SEs like Jim Cagley, Gene Corley, Ron Hamburger, Jim Malley, Emille Troupe and others all presented or participated in panel discussions on topics related to building codes, business practices and forensic investigations.

Day 3 was dedicated to reports from all 39 member organizations (MO) attending. Common themes of these short summaries included the negative impact of the economy on SEA member participation, emergency response efforts undertaken by the MOs, and activities of Young Member Forums in MOs that have them. Sue Frey presented the report for SEAO and highlighted our new website, the efforts of our snow load committee, webcasting of our meetings and the seminars we hosted last year. The afternoon sessions consisted of an interactive workshop on structural engineering licensure attended by most of the delegates. Day 3 concluded with a NCSEA Design Awards gala dinner, at which Catena Consulting Engineers of Portland won the Outstanding Project in the $30-100 million category for their work on the Shriners Hospital Addition in Portland.

On a personal note, I found the conference to be very enlightening and informative. In particular, I was impressed by the efforts of the NCSEA Committees in the areas of advocacy and code development. From my perspective, NCSEA appears to be representing its 10,000 members in a very professional and proactive manner that is well worth the $20 annual dues included in our SEAO dues. Sue and I would like to encourage all SEAO members to attend the 2011 NCSEA annual convention to be held in St. Louis and to join the national committees, even if only as a corresponding member via conference call. http://www.ncsea.com/

2011 NW Conference

September 22-23, 2011: Spokane, WA

Northwest Conference member organization websites:
http://www.seaidaho.org/www.seabc.ca/ http://www.seaw.org/ www.seao.org

Sue Frey and Ed Quesenberry attended the 2011 SEA Northwest Conference held in Spokane as voting delegates representing SEAO along with 60 other members and delegates of SEAs from Washington, Idaho and British Columbia. The conference kicked off with a Northwest Conference Council meeting where delegates from the member organizations reviewed council financials, gave reports on last year's organization activities, and recommended resources that could be shared amongst member SEAs. SEA Spokane reported that they estimated a net profit of between $3000 and $4000 for the conference, which was welcome news due to the losses sustained by SEAW Southwest in 2009. A well-negotiated contract with the hotel and SEA Spokane's ability to procure 20 vendors for the tradeshow component of the conference were the leading factors in the profitability of the event.

Highlights of the member organization reports included the following:

- SEA Idaho joined ICC and is able to get all ICC publications at reduced rates for their members.
- SEA Idaho is starting to assemble a committee to investigate pursuing separate SE licensing in Idaho.
- SEABC reported 907 members, 258 of which are students. They have a very active Younger Members Group that participates in community events and host events and tours throughout the year for their members. They have found that the YMF is one of the main sources of new members for their organizations. SEABC publishes many white papers and seminars each year and offer courses pertinent to structural engineers.
- SEA Spokane and Southwest struggled financially in the last year due to diminished membership. Despite this, they still held monthly meetings and SEASW hosted a tradeshow similar to SEAO's.
- SEAW was forced to increase their annual dues due to rising costs. This was the first increase in 5 years. They are still providing their successful SE exam review course.

Other business at the NWCC meeting included a discussion that the University of Idaho is having in developing a multi-state snow load map. Apparently, when snow load maps of individual states are overlain, snow load values along the borders between states do not match up. An ASCE snow load committee has been formed to assist in resolving these issues, and member SEAs may be contacted to assist. SEAO's snow load committee can team with Idaho's work (and based on the recent Western Council meeting, can take advantage of the SEA of Montana's new snow load data program). Resources can be merged – which is one benefit of both NW Council's and the Western Council's annual delegate meetings.

The Northwest SEA Conference commenced after the NWCC meeting and consisted of several technical sessions including a presentation on performance-based design by Ron Hamburger. The vendors supplied plenty of new literature and information to attendees, and donated some nice prizes to the raffle. The social festivities throughout the conference were fun and well attended.

The next NW Conference will be hosted by SEAO and will be held on July 26-28, 2012 at Kah-nee-ta Resort and Spa in Warm Springs, Oregon. Mark your calendars now. Bring the family.

Shriners Hospitals for Children™ – Portland Receives National Recognition

Catena Consulting Engineers, a structural engineering firm in Portland, Oregon, recently received an Outstanding Project Award from the National Council of Structural Engineers Associations (NCSEA) for their work on the $71 million expansion to the Shriners Hospitals for Children™ in Portland, Oregon. Faced with an aging facility and increased patient needs, the Shriners took on the challenge of expanding their existing hospital on a constrained site that demanded a creative structural solution. The result is a five-story, 73,000-square foot hospital addition that spans 90 feet over an existing four-story parking structure that is designed to accommodate a future three-story addition.

The project team, including SRG Partnership Inc. and Andersen Construction Company, developed an innovative concept of having the addition span over the existing parking structure which resulted in over $20 million in project cost savings. Incorporating buckling restrained braced frames for seismic resistance enabled the Shriners to reallocate funds to research and patient care. Constructed on an environmentally sensitive hillside site, the design not only saved construction costs and schedule, it resulted in a significant reduction in use of natural resources. "Simply outstanding," states Tom Ochab, Director of Facilities Management, Maintenance and Construction for Shriners Hospitals for Children™, "Catena Consulting Engineers' plan for building a new facility over our existing parking structure was brilliant"

Chris Thompson, Catena's Principal-in-Charge for the project states, "This project demonstrates not only creative structural engineering, but outstanding teamwork from all project stakeholders. We are honored to have been part of this once in a lifetime project."

The goal of the NCSEA Awards program is to recognize creative achievement and innovation in structural engineering. The projects were judged based on the following criteria:

- Creativity of structural design
- Complexity of criteria or unique problems
- Innovative application of new or existing materials or techniques
- Ingenuity of design for efficient use of materials and labor
- Exceeding client / owner's needs or expectations
- Suitability of the structure for its environment

The Shriners Hospitals for Children™ is a national network of 22 hospitals specializing in the care of children with orthopedic conditions, burns, spinal cord injuries, and cleft lip and palate. Unique to Shriners, a child is admitted based solely on their medical needs, not on their ability to pay for services. At the Portland hospital, located on the OHSU Marquam Hill campus, surgery, rehabilitation, and research are also conducted.

SEAO wishes to congratulate Catena Consulting Engineers on their award for excellence and for placing Oregon in the national spotlight.

SEAO SCHOLARSHIP FOUNDATION ANNOUNCES 2011-2012 SCHOLARSHIP WINNERS

The Structural Engineers Association of Oregon has awarded three $2,000 scholarships to Austin D. Maue, Nathaniel W. Hardy, and Zachary W. Davis, and one $2,500 Don Kramer Memorial Scholarship to Adrienne C. Busch for the upcoming academic year. Once again, the generosity of our membership, combined with the success of the annual Trade Show, continue to keep our scholarship program strong.

Austin D. Maue is a senior at Oregon State University, where he has an engineering GPA of 3.44 and an overall GPA of 3.53. Austin has made multiple trips with a group of contractors to the low-income suburbs of Juarez, Mexico to build a vocational training center and a security wall around a medical center. He has been a volunteer for the CH2M-Hill/OSU High School Bridge Competition, an annual event intended to encourage high school students to pursue a career in science. Austin's goal is to become a structural engineer, working for a firm that specializes in bridge design.

Nathaniel W. Hardy completed his bachelor's degree this past spring at the University of Portland with an engineering GPA of 3.85 and an overall GPA of 3.80. Nathaniel is now enrolled at University of Washington for graduate studies in structural engineering. Nathaniel is an active member of ASCE student chapter and served as President last year. He was the master of ceremonies for the ASCE Host-a-Student Banquet last spring, he organized the regional concrete canoe competition in Portland, and he participated in a stream restoration project with SOLV (Stop Oregon Litter and Vandalism). Nathaniel has gained a variety of engineering experience, working as an intern at KPFF one summer and at Parkin Engineering this past summer.

Zachary W. Davis is a senior at the Oregon Institute of Technology, where he has an overall GPA of 3.85 and engineering GPA of 3.85. Over the past three summers he has worked for ODOT doing field engineering and inspection. This past summer he spent overseeing construction on Interstate-5. Zach is a member of ASCE student chapter, president of the Institute of Transportation Engineers, and a designer for OIT's steel bridge team.

Adrienne C. Busch graduated from the Oregon Institute of Technology with an engineering GPA of 3.82 and an overall GPA of 3.79. She is also a recipient of the Oregon Institute of Technology Engineering Honors Scholarship and the Presidential Silver Level Scholarship from OIT. As student member of Engineers Without Borders, Adrienne traveled to Tanzania to repair wells and pumps in a poor region of the country. She has been a member and officer in the ASCE student chapter at OIT. After working this past summer for Oregon Tech Foundation at OIT, Adrienne is now attending UC Berkeley to earn a Master's degree in Structural Engineering.

The Foundation would like to thank the scholarship selection committee: Chad Kilian of Black & Veatch, Brad Larsen of OBEC Consulting, and Dominic Webber of BergerABAM.

THANK YOU FROM A SCHOLARSHIP RECIPIENT

Nathaniel Hardy
1306 NW 54th Way
Vancouver, WA 98663
September 23, 2011

Attn: Tonya Halog
Structural Engineers Association of Oregon
9220 SW Barbur Blvd. #119, PMB#336,
Portland, OR 97219

To the SEAO Board of Directors, the Scholarship Committee, and all SEAO members,

I want to begin by thanking all of you for your generous scholarship which is now helping fund my pursuit of a Master's degree at the University of Washington. Your willingness to assist young structural engineers is a testament of your commitment to promoting and fostering the educational endeavors of students like me.

As you know, most structural students need training beyond the undergraduate level; which I myself can attest to. Unfortunately, budget cuts and a lack of external funding have made attending graduate school a tough goal to achieve. Therefore, your scholarships are more important to students now than ever. I know I speak for many in saying that gifts like yours are very much appreciated.

I want to apologize for being unable to attend tonight's presentation. I do look forward to attending future meetings, and having the opportunity to meet, and thank many of you in person. Thank you again so much.

Most Sincerely,

Nathaniel Hardy

NEW MEMBERS

WELCOME NEW MEMBERS

August:
Greg Wilken, Drucker Zajdel Structural Engineers
Tom Walsh, City of Portland
Spencer Straub, Portland State University
Darrell Huber, Huber Engineering
Andrew Conrad, Ch2M Hill
Matthew Chase, Kramer Gehlen & Associates
Bob Glasgow, Miyamoto International
Roger Haydon, Haydon Civil Engineering

September:
Jon Harper, Brown & Caldwell
Thomas Gayne, Student

October:
Cardine Hildt, GeoDesign
Nicholas Burnam, Eclipse Engineering
David Goodin, Hardy Frames
John Meissner
Mehmet Inan, University of Portland
Stephen Stenberg, VLMK Engineers
Randy Cleveland, Marquess & Associates
David Bolger, Cascadia Engineering
Steven Judson, Building Codes State of Oregon

DUES REMINDER

Annual dues for SEAO membership were due on October 31, 2011.

You can make checks payable to SEAO and mail to:

9220 SW Barbur Blvd, No. 119
Portland, OR 97219

Or renew online using a credit card by going to: www.seao.org

Renewals: Member (licensed PE in Oregon): $102
Affiliate Member (unlicensed): $95
Student Member (full-time student in Civil or Structural Engineering): $16.50

Membership must be current (dues paid) to have your name included in our annual roster.

To update our records, please be sure that we have your correct address, name of your company, current phone numbers, and your email address. This will guarantee that you are receiving all correspondence and information from SEAO. You can update your information online or if you have any questions contact jane@seao.org.

STRUCTURAL ENGINEERING: A SERVICE OR A COMMODITY?

(Continued from Page 2)

ing it in the name of survival.
Dan Cuoco outlined many actions other than fee slashing that structural firms have historically taken in order to maintain their efficiency, profitability and position in the marketplace in tough economic times. Some of those include:

- Reducing discretionary expenses
- Reduce Payroll
- Target Reduced Profit
- Increase Marketing and Business Development efforts
- Take advantage of "down time" to improve office efficiencies

As a profession, if we can focus on making changes to our business practices that are positive and long-term in nature, rather than on ones that achieve nothing other than short term gratification, we will all be better off when the economy gets back on track. There is enough blood in the water these days due to increased competition, tighter construction budgets and compressed project schedules without adding drastic fee cutting to the mix. Do we really want to gamble with our future as professionals?

ANSWERS TO SEISMIC QUIZ ON PAGE 9

1. 10*Acw*(f'c)^0.5 per ACI 318-08 section 21.9.4.5. Note that wall piers sharing a common lateral force are limited by section 21.9.4.4.
2. ASTM A706 or ASTM A615 Grade 40 or 60 that meets the yield and tensile limitations of ACI 318-08 21.1.5.2 (a) and (b).
3. 0.6 per ACI 318-08, 9.3.4 (b)
4. 240 ft (per ASCE 7-05, 12.2.5.4)
5. For length-to-depth ratios < 2, with shear stress > 4(lambda) (f'c)^0.5 per ACI 318-08, 21.9.7.2
6. False. "…reinforcement should be appropriately distributed along the length and height of the wall…" ACI 318-08, R21.9.4

NORTHWEST CONCRETE MASONRY ASSOCIATION
PRESENTS

STRUCTURAL MASONRY DESIGN WEBINAR

Structural Masonry Design Webinar

This three-session webinar will focus on the requirements of 2009 IBC Chapter 21 and the referenced material standard TMS 402/ACI 530/ASCE 5. Both working stress and strength design of reinforced concrete masonry will be covered. Learn how to use and interpret the building code through masonry building element design examples. Seminar participants can earn continuing education credit. (7.5 PDH credit available) Certificates of attendance will be issued.

Webinar Details:

Dates:	November 29, December 6, 8, 2011
Time:	4 - 6:30 pm *Pacific Time*
Cost:	$125 per session per internet connection or $325 for all three sessions.
Connection:	The webinar will be conducted using Go To Meeting. Each connection site will receive one workbook which includes a bound set of course notes. Additional workbooks are available for $20 each plus shipping and handling.

Webinar Content:

Nov. 29:	Masonry Materials, Code Overview, Beam Design, Seismic Testing
Dec. 6:	Columns, Out-of-Plane Walls, Quality Assurance, Constructability
Dec. 8:	Anchor Bolts, In-Plane Walls, Direct Design

Instructors:

Ray Miller, P.E.,	Miller Consulting Engineers, Portland, OR - Nov. 29th
Sue Frey, P.E.,	CH2M Hill, Corvallis, OR - Dec. 6th
Ed Huston, P.E.,	Smith and Huston Consulting Engineers, Seattle, WA - Dec. 8th
Tom Young, P.E.,	Northwest Concrete Masonry Association, Mill Creek, WA

NORTHWEST CONCRETE MASONRY ASSOCIATION
STRUCTURAL MASONRY DESIGN WEBINAR

Please plan to participate. Seminar participants can earn continuing education credit. You can register on-line at www.nwcma.org, by calling NWCMA at 425.697.5298, or by faxing this completed form to 425.697.2679.

Name: _____

Company: _____

Address: _____

City/State: _____ Phone: _____ Fax: _____

Email: _____

Register me for the sessions marked below:

☐ Nov. 29, 2011	$ 125.00
☐ Dec. 6, 2011	$ 125.00
☐ Dec. 8, 2011	$ 125.00
☐ All three sessions	$ 325.00
☐ _____ Extra workbooks @ $20/ea plus $10.00 s/h	$ _____
Total Due	$_____

Payments:

☐ Check or Money Order (payable to Northwest Concrete Masonry Association)

☐ Credit Card (Check one) □ Visa □ Mastercard □ Discover □ American Express

Card Number _____ Name on Card _____

Billing Address: _____

Exp. Date _____ CCV # (last 3 digits on back of card) _____

Confirmation:

You will receive confirmation of your registration, including detailed information regarding Go To Meeting requirements.

Please send completed registrations and payment to:

NWCMA · 16300 Mill Creek Blvd, Ste 208-C · Mill Creek, WA · 98012 or fax to 425.697.2679
Questions? 425.697.5298