SEAI Newsletter

May 2006

Structural Engineers Association of Idaho
P.O. Box 8733, Boise, ID 83707
www.seaidaho.org

BOARD OF DIRECTORS & AND COMMITEE CHAIRS

Please feel free to contact our board members with ideas or suggestions for program/speaker topics or how SEAI can better represent the Structural Engineers of Idaho.

INSIDE THIS ISSUE

President
Shawn Reeder - Performance Engineers
shawnr@idahotruss.com 888-5200

Vice-President
Sarah McClendon - McMillen Engineering
sarah.mcclendon@mcm-eng.com 342-4214 x306

Treasurer
Chris Holladay - AHJ Engineers
cholladay@ahjengineers.com 323-0199

Secretary
Patrick Bird - Lochsa Engineers of Idaho
Patrick@lochsaidaho.com 342-7168

Director
Kent Soelburg - CH2M Hill
Kent.soelberg@ch2m.com 383-6349

Director
Greg Leishman - Stapley Engineering
Gregl@stapley.net 375-8240

Past President
Steve Call - Call Engineering
scall@callengineering.com 321-2656

Program/Seminar Chair
Wilson Antoniuk - Trus Joist
antoniw@trusjoist.com 395-2458

Membership Chair
Ash Hobbs - AHJ Engineers
ahobbs@ahjengineers.com 323-0199

Building Code Chair
Mike Brown - EHM Engineers
Mike.brown@ehmengineers.com 386-9170

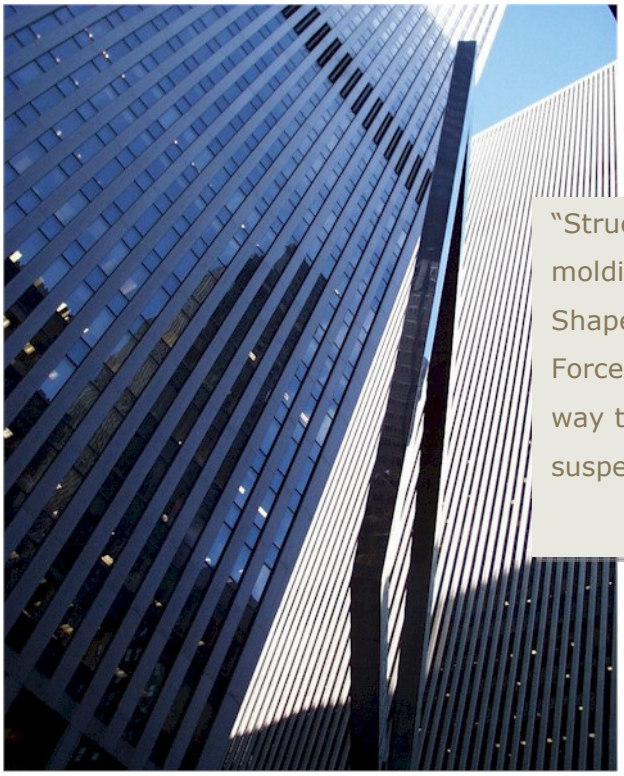
QBS Representative
Scott Soule – Treasure Valley Engineers
ssoule@tveinc.com 463-0305

NEXT SEAI MEETING — MAY 16TH

The next meeting for SEAI will be held on May 16th, 2006. For more information including topic, time, location and pricing, please visit our website, www.seaidaho.org, or contact Wilson Antoniuk by email at antoniw@trusjoist.com or by phone at 395-2458.

HAVE A SUGGESTION FOR A MEETING?

If you have any suggestions for future speakers, items of discussion or anything else that you think would be beneficial to the structural engineers attending SEAI meetings, please send your comments/ideas to Wilson Antoniuk by email at antoniw@trusjoist.com or by phone at 395-2458.



"Structural Engineering is the art and science of molding Materials we do not fully understand; into Shapes we cannot precisely analyze; to resist Forces we cannot accurately predict; all in such a way that the society at large is given no reason to suspect the extent of our ignorance"

— James Amrhein

BY THE WAY… ENGINEERING NEWS AND GENERAL INTEREST

SEAI WELCOMES NEW MEMBERS

SEAI continues to grow and grow… We would like to welcome the following new member:

Name	Employer
Brad Terry	**CH2M Hill**

Welcome to SEAI, Brad!

CHECK OUT THE NEW WEBSITE

If you haven't noticed, www.seaidaho.org recently received a 'little-bit' of a facelift. The website will continue to see minor changes, so please be patient and make sure to report any "errors" or suggestions you may have to the webmaster, Tyler Haney, at thaney@tveinc.com.

UPCOMING SEMINAR

The 2006 SEA Northwest Conference is being hosted by SEAO. The conference is being held at the Skamania Lodge in the Columbia River Gorge July 20-22. The theme is "Engineering in the Land of Earth, Wind, and Ice" presentation topics and speakers will be announced in future newsletters. For more information, visit our website www.seaidaho.org and look under "Events".

VOLUNTEER FOR COMMITTEE POSITIONS

SEAI currently needs members to fill committee positions. If you are interested in serving on a committee, or possibly leading a committee, please contact Sarah McClendon at (342-4214) or sarah.mcclendon@mcm-eng.com. Committee positions include Program Committee, Legislative Committee, Building Code Committee, Technical and Education Committee, and Northwest Conference Committee.

MEMBERSHIP DUES TO GO OUT SOON

Dues will be going out soon for the 2006 - 2007 year. We would like to thank all of our renewing members, who make our meetings and seminars possible. If you are interested in joining SEAI, you can find a new membership application on our website at http://www.seaidaho.org under "Membership".

GET YOUR NEW 2005 NDS

SEAI has two copies of the 2005 NDS for Wood Construction ASD/LRFD left over from their recent wood seminar. If you would like to purchase a copy for $37.50 please contact Chris Holladay at 323-0199. They will be sold on a first come, first serve basis so hurry while supplies last.

DESIGN!
BY JAMES M. FISHER, PH.D., P.E

EXCERPT FROM:
MODERN STEEL MAGAZINE – APRIL 2006

• **Create Flintstones designs.** *Mike West, Computerized Structural Design*. These are designs that Fred and Barney can design and build. Creating a Flintstones design is a corollary to the old adage, KISS—Keep It Simple, Stupid. Remember that some poor soul is going to erect your design in the blazing heat of the day or in the freezing cold. Complexity is the last thing the worker needs to worry about.

• **Be a ksi.** *C.K. Wang, University of Wisconsin*. Professor Wang would often say in the classroom to imagine yourself as a ksi on a journey from one part of the structure down to the earth. You must be able to find your way through every member, every connection, every weld, every bolt, and every screw without being overstressed. We now call this "load path."

• **The trickle theory.** *Me*. The trickle theory is the opposite of tracking loads through the structure. The trickle theory presumes that the ksi will go somewhere and find its way to earth without engineering analysis. Don't practice the trickle theory.

• **If it works, don't mess with it.** *Anonymous*. There is great wisdom and judgment in this statement. A proven design will work any multitude of times so long as the scale of the structure does not change.

• **You cannot do just *one* stupid thing in the design**. *Mike West, Computerized Structural Design*. Once you use bad judgment in a design, more bad decisions will have to be made.

• **Learn from your failures**. *Anonymous*. The best way to obtain judgment.

• **Less is more**. *Mies van der Rohe, Illinois Institute of Technology*. Similar to KISS, only more eloquent.

DESIGN! *(continued)*

• **God is in the details**. *Mies van der Rohe, Illinois Institute of Technology*. The details are the design.

• **If it looks good, it probably is good.** *Dick Schleis, Computerized Structural Design*. A part of judgment. Proportions often indicate if a structure or structural components are designed correctly. Get to the job site. Designs look different when you see them in real life.

• **Don't worship the weight god.** A*nonymous*. Least weight is rarely least cost.

• **If we can prevent local and lateral buckling, then we should be able to design any structure based on stiffness and serviceability considerations.** *Jim Wooten, AFCO Steel*. Structural steel is a wonderful material. If we prevent buckling in any form, a steel structure will find a way to stay up.

• **I'd rather be in an over-braced and under-designed building, than in an overdesigned, under-braced building.** *Me*.

• **If you can't rough it out on an envelope, you shouldn't design it.** *Bill LeMessurier, LeMessurier Consultants*. Again judgment. You should know the answer to the problem before you start with sophisticated analytical analysis.

• **Don't hide under your desk.** *Mike West, Computerized Structural Design*. You cannot solve a problem relative to your design if you don't face it head on. React, and react quickly.

• **Strive for structural simplicity.** *Fazlur Khan*.

• **Don't get lost in your own technology.** *Fazlur Khan*.

ASSISTING FUTURE ENGINEERS IN ACHIEVING SUCCESSFUL DESIGNS

Experienced Engineers:

• Be a mentor. Take time to relay your years of experience to younger, less experienced engineers.

• Talk about judgment to your young engineers, and talk about the importance of judgment in the design process.

• Be open to design suggestions by fabricators, erectors, and detailers.

• Embrace the future. Design is not a static process. Methods change. You will obtain successful designs by embracing the future, but study carefully new ideas before embracing them.

• Give of your time to AISC, ACI, ASCE, and other professional organizations. You will learn the latest technology to "pass on." You can also make a contribution to the profession, and in addition you will obtain satisfaction and lasting friends.

• Look beyond what we do in the United States. You can gain insight to interesting design concepts from what happens overseas.

Younger engineers:

• Learn to communicate. Engineering is a people business.

• Get involved with professional activities.

• Don't forget that "God is in the details."

• Get out to the job site. You will learn a great deal.

• Think about how the "IN" basket on your desk gets filled. You will not have employment unless projects are sold. Projects are sold by doing correct and complete work in a timely manner. Help your firm make a profit. Profit is not a dirty word, and without it the firm will not exist.

To achieve successful designs, remember to:

Think about the big picture
Think constructability
Be a team player, and
Use your judgment at all times.

For article in full print, follow this link:

http://www.aisc.org/MSCTemplate.cfm?Section=Back_Issues1&template=/ContentManagement/ContentDisplay.cfm&ContentID=31763

Thank you to the Modern Steel Construction (MSC) Team for allowing SEAI to reprint this article originally printed in April 2006 of MSC.

SEAI MEETING RECAP — APRIL

BY ASH HOBBS, P.E.

At our last SEAI meeting (April 18, 2006), Michelle Wilson, manager of Education and Product Development at the Portland Cement Association, gave us a presentation on concrete mix design and specifications. As engineers, it's easy for us to blame poor concrete performance, such as scaling, honey-combing, and reinforcing corrosion, on the contractors and their placement techniques; however, sometimes poor performing concrete may be due to overly restrictive concrete specifications. A recent push in the concrete industry is for performance based specifications as opposed to the traditional prescriptive based specifications, known as the prescriptive to performance (or "P2P") initiative.

Performance based specifications focus on how the concrete will perform in the final product, and may include any or all of the following requirements:

- Strength
- Durability
- Flatness
- Permeability
- Shrinkage Tolerance
- Sulfate Resistance

According to Michelle's presentation, the objective of a concrete mix design is "to determine the most economical and practical combination of readily available materials to produce a concrete that will satisfy the performance requirements under particular conditions of use." The most qualified person to meet these objectives is the concrete supplier; however, there needs to be a sufficient number of performance requirements in the specifications to ensure the desired outcome.

Some common concrete specifications that may be overly restrictive to the contractor include the strict interpretation of water-to-cement ratio versus strength from the table provided in ACI 211, the specification of a maximum slump without consideration of placement conditions, and the specification of a finish without consideration of coverings, use, or air content. Instead, specify a maximum water-to-cement ratio based on exposure, allow the contractor to base overall concrete slump on placement conditions, and allow the contractor to select a finish based on coverings, use, and/or air content.

SEAI would like to thank Michelle for her informative presentation. If you have a question for Michelle regarding her presentation, you can email her at mwilson@cement.org.

BE INVOLVED WITH YOUR NEWSLETTER!

The SEAI Newsletter is a monthly publication. Newsletter submissions are encouraged from the SEAI community. If you have a suggestion, feature, link, product review or anything else that maybe of interest to the newsletter readers, please email them to our newsletter editor, Tyler Haney at thaney@tveinc.com

EVENT CALENDAR

(EVENTS ARE SUBJECT TO CHANGE)

May 12: Ballots for SEAI Elections must be mailed.

May 16: SEAI Election Results will be announced.

July 20-22: The 2006 SEA Northwest Conference at the Skamania Lodge in the Columbia River Gorge.

August 31: New AISC Specification/Manual Seminar in Boise, ID. "Design Steel Your Way with the 2005 AISC Specification." For more information visit our website, www.seaidaho.org and look under "Events".

Sheep's Second Law of the Universe:

Simple, clear purpose and principles give rise to complex, intelligent behavior. Complex rules and regulations give rise to simple, stupid behavior

STRUCTURAL ENGINEERING LINKS

FEATURED LINK: Live Video Feed of Benchmark Shake Table Testing of a Full-Scale Two-Story Townhouse Woodframe Building http://nees.buffalo.edu/projects/NEESWood/video.asp

Applied Technology Council - http://www.atcouncil.org

Board of Professional Engineers and Land Surveyors - http://www2.state.id.us/ipels/

City of Boise Sp. Insp. Checklist – http://www.cityofboise.org/pds/applications/Building/Special_Inspections.pdf

Design Build Magazine (McGraw-Hill) - http://www.designbuildmag.com/

Engineering & (Bi-Weekly Newsletter) - http://www.engineeringand.com

Engineering Forum - http://www.eng-tips.com/

Structural Engineers Association International - http://www.seaint.org/

Structural Engineers Association of Utah - http://www.seau.org/

Structural Engineers Association of Washington - http://www.seaw.org/

Structural Engineers of Oregon - http://www.seao.org/main.htm