



SEAC

GENERAL NOTES

Structural Engineers Association of Colorado Newsletter

MAY GENERAL MEETING

Masonry Evaluation and Repair

Schedule

Mark Your Calendar
(2010)

General Membership Meetings

(Breakfast 7:30 a.m.)
January 21
March 18
May 20
July 15
September 16

Business Management Committee Meetings

(Breakfast 7:30 a.m.)
February 11
April 8
June 10
August 12
October 14

SEAC Board of Directors Meetings

(7:30 a.m.)
January 7
February 4
April 1
June 3
August 5
October 7

Annual Dinner Banquet

November 18
6 - 9 p.m.

Engineers are often confronted with the task of evaluating and strengthening buildings. Whether you are dealing with a structure built hundreds of years ago or in the middle of a new construction project, your analysis relies on accurate information regarding as-built information, material properties, and the presence of cracks or voids inside wall sections.

Many nondestructive evaluation techniques are available for masonry construction. Simple rebound hardness testing can provide critical information on mortar hardness and are useful for verifying job-site quality assurance testing. Microwave radar, infrared thermography, pachometer scanning, and borescope observations are useful for locating grout and reinforcement in modern masonry, or to determine void locations in historic construction. Flatjack methods are also available for determining masonry compressive and shear strength in place without resorting to sample removal for laboratory testing.

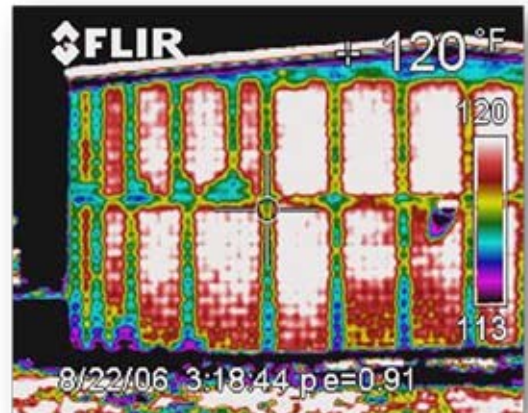
Cracks are troubling to many building owners and can have an effect on structural performance. Monitoring crack movement is essential, to help identify the cause of the crack and to determine if the crack is active or dormant. Crack movement can be monitored using simple measurements, or electronic gages with dedicated data loggers.

The presentation will provide an overview of some common techniques for evaluating masonry construction, including both nondestructive and in situ test methods. We will also discuss methods for adding reinforcement to in-place masonry construction, adding retrofit ties to veneer walls, crack stitching, and the use of injection methods for crack repair and stabilization of historic masonry.

May General Meeting

Date: Thurs. May 20, 2010

Speaker(s): Michael Schuller, P.E.
Location: Renaissance Denver Hotel
3801 Quebec Street
(South of the I-70 Quebec Intersection)



Infrared image of a partially grouted concrete masonry wall. In this image grouted cells show as cool regions.



Michael Schuller, P.E., is president of Atkinson-Noland & Associates in Boulder, Colorado, a consulting engineering firm specializing in masonry materials and structures. He has over 20 years' experience with masonry preservation including nondestructive evaluation and repair

procedures applied to historic masonry. Michael has over 80 publications relating to nondestructive evaluation, repair, and structural behavior of concrete and masonry structures. Over the last 21 years he has worked on evaluation and repair of hundreds of buildings, bridges, and other structures throughout the United States, Canada, Chile, India, Russia, and Cambodia. Mr. Schuller serves on the Board of Directors of the Association for Preservation Technology (APT) and the Rocky Mountain Masonry Institute, is a Fellow of The Masonry Society and a member of APT's College of Fellows.

Please e-mail your reservation to Caryn at: seac@martinmartin.com
Reservations MUST be made By Monday, May 17, 2010.

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Information for inclusion in the newsletter must be received one month prior to the next general meeting.

Caryn L. Bauer
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President's Message

THE STRUCTURAL ENGINEER AS ROCK STAR



Okay, maybe that's a stretch but we weren't really looking for fame and fortune when we entered this profession anyway. Do you recognize any of these guys: Eugene Figg, Hannskarl Bandel, Vladimir Shukhov? They aren't household names but they did all make significant contributions to the field of structural engineering. Figg helped advance the use of cable stayed bridges and segmental concrete. Bandel worked with Eero Saarinen on the St. Louis Arch. Shukhov designed the first hyperboloid structure in 1896.

How about Tung-Yen Lin, Ove Arup and Fazlur Khan? I'm guessing these names are a bit more recognizable. T.Y Lin was huge in developing the use of prestressed concrete, both as a practicing engineer and as an educator. Ove Arup? - think Sidney Opera House. Arup actually has something in common with fellow rock stars Elton John and Paul McCartney. They have all been knighted. Fazlur Khan's innovations in structures include the framed tube that was used in the design of the World Trade Center and the bundled tube that was the basis for the Sears Tower. In 2006 Kahn was elected into the Illinois Engineering Hall of Fame. Yep, they actually have an engineering Hall of Fame.

Speaking of engineers as rock stars, this month's headliner is Mike Schuller from Atkinson Noland (www.ana-usa.com) talking to us about masonry repair and retrofit. We haven't firmed up the opening act yet, but we have a great pool of local talent available so come early.

Rock Star Quote of the Day:

"If I knew I'd be playing this song for so long I'd have written something else."
Joe Walsh

Board of Directors News

Your SEAC board of directors has been hard at work discussing high level engineering topics such as:

- Whether or not nametags should be printed up for each meeting?
- Is the size of the print on nametags large enough?
- If you take your nametag home and lose it should we charge you to reprint a new one?
- Can we figure out a way to validate parking passes without going up to the lobby?
- How did our new sign-in procedure work?
- Were the scrambled eggs too runny or just runny enough?

As you can see, we handle some pretty heady issues.

On a serious note, we have finalized our 2010 budget and have included it in this newsletter. We are showing a deficit for this year and have been discussing how we can reverse that in the future.

I should mention that while doing research on the internet for this newsletter piece I found an ad for a very cool refrigerator magnet that says "Civil Engineer by day – Rock Star by night". If we order one for everyone I think we can get a price break.

GENERAL NOTES - SPONSORS

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In The Spotlight

BUSINESS PRACTICES COMMITTEE CALL FOR MEMBERS

The Business Practices Committee whose purpose is to discuss issues common to owners and managers of structural engineering practices is interested in expanding its membership. The objectives of the committee is to conduct regular meetings approximately 5 times per year; obtain speakers on management of structural engineering firms, social topics and topics of general interest; and conduct an annual Business Practices Survey in March/April with results distributed in June/July to all owners/managers of responding participating firms. Past discussion topics have included codes and standards, special inspection services, health and professional liability insurance, IT solutions, communications, administration staffing options, working styles within the office, BIM vs. CAD, etc. All meetings consist of a roundtable discussion of the selected topic(s) and typically result in useable data for all attendees from the most senior owner to the junior manager.

The committee would like to extend an invitation to all owners, managers and other interested individuals to attend the June 10, 2010 membership meeting at which time we will review the results of the 2010 (for the 2009 year) Business Practices Survey. Members who participated in the survey will have a copy of the results; however, all attendees will be involved in reviewing the results and the interactive conversations regarding the results. This meeting will provide an opportunity for individuals to become more familiar with the purpose and structure of the committee, its current members, its goals and upcoming topics for the remainder of the year. The committee is a great resource for valuable information relative to the management of a structural engineering consulting firm.

Please RSVP to Kelley at Structural Consultants Inc. 303-399-5154 or Kelley@sci-denver.com. The breakfast meeting will begin at 7:30 am at the Renaissance Hotel and will end at approximately 9:00 am. The cost of the breakfast is \$20.00 per person payable at the door for those who are NOT currently a member of the Business Practice Committee.

Please call with any questions you may have.

R. Wayne Muir, P.E. 303-399-5154
Chairman, Business Practices Committee

SNOW LOAD COMMITTEE REACTIVATING

After a few years of inactivity, SEAC is restarting the Snow Load Committee. We would like to invite all interested SEAC members to attend our first meeting: 3 pm Friday, May 21st at S.A. Miro, 4582 S. Ulster St. Parkway, Suite 300, Denver.

We will be using this kick-off meeting to decide what topics we would like to focus on for the coming year. Possible topics include clarification of application of snow loads for mountains vs. lower elevations, falling snow, creating an electronic snow load map based on latitude and longitude, updating the ASCE 7 reference, and writing an article for Structure magazine about the 2007 Colorado Ground Snow Load Report and Map.

If you cannot make this meeting, but are still interested in participating in the committee, please e-mail Jeannette Torrents (jtorrents@jvajva.com).

Welcome

Please welcome our newest members to SEAC:

Stanley C Stoll (Affiliate Member)

Elayne R. Fletcher (Professional Member)

Minh-Chau D. Le (Affiliate Member)
JVA, Inc.

INVITATION FOR PROFESSIONAL OPINIONS ON ETHICS

Like many engineers, I am always thinking analytically about something – how to optimize efficiency in my daily schedule, the physics of a fastball versus a curve ball, or why mozzarella string cheese tastes so much better when you actually peel the strings than it does when you eagerly take a bite off the stick (the answer to this one is the surface area to mass ratio, in case you were wondering). For this article however, the more relevant discussion question is: What are the most important characteristics of a recently graduated engineer – or any recent graduate for that matter? A high grade point average? A long list of extracurricular activities, internships and recommendation letters? How about a passion for science and mathematics? Unquestionably, these are all very good qualities to have, and should proffer the beholder rapid advancement in any organization. But what about a passion for people? Has this become irrelevant in modern society? Does true empathy exist, or is it simply an idealistic sentiment? Furthermore, what about ethical dogma – those convictions and beliefs that guide our thoughts and actions, in situations where conscience and integrity are pitted against our innate human instincts of survival? The catalysts that drive some people to *react* and seek instant gratification, by decreasing mental stress, relegating personal or professional accountability, or increasing physical pleasure; and others to *respond* with long-term vision, a servant-minded attitude, and a belief that responsibility is not something one may accept, but rather only something one may choose to reject.

My name is **Dave Johnson** – a current master's degree student at the University of Colorado-Denver (UCD). Working with Dr. Kevin L. Rens, professor and chair of the civil engineering department at UCD, I am writing a thesis to address topics ranging from everyday ethics and responsibility to those leadership characteristics most applicable to engineers. Specifically focusing on the role of the individual, my objective is to provide a new perspective and hopefully some clarification on a very complicated subject. I hope to accomplish this by researching many of the greatest minds in history, an abbreviated list of which includes Aristotle, Gandhi, Martin Luther King Jr., and the Dalai Lama. I am also researching engineering case studies, both structural failures as well as their successful

counterparts. Finally, multiple surveys will be conducted of undergraduate and graduate level engineering students, and modern-day professionals.

With that said, it is my pleasure to invite SEAC members to participate in an anonymous online survey on engineering ethics. My thesis home page is: <http://sites.google.com/site/ethicsdotheotherightthing/thesis> . To access the survey, click the link on the left side of the page, or navigate to: <http://sites.google.com/site/ethicsdotheotherightthing/thesis/survey> , and enter the **password: ethics2010**. The survey and website will be available May 5, 2010 through May 26, 2010, and should only take a short amount of time. You can read more about the content of my thesis by clicking on the overview link, or by navigating to: <http://sites.google.com/site/ethicsdotheotherightthing/thesis/overview/> . Feel free to pass this information on to other structural engineers who are not SEAC members; or architects, owners and contractors who might be interested in participating in similar surveys. I encourage everyone to also visit the thesis home page and leave feedback in the comments section. Please contact me directly at davidajohnson12@gmail.com with any questions, concerns, or technical difficulties. Thank you in advance for your participation!

SEAC GUEST POLICY

In an effort to keep our breakfast meetings open to non-members while controlling costs, SEAC will charge \$20 per guest per meeting effective in March. If a guest becomes a member of SEAC later in the year, breakfast meeting payments for that year will be applied toward the cost of his or her annual dues. If you are attending as a guest or are bringing a guest to our meeting, please indicate that in your RSVP. We will have a separate guest sign-in sheet at our check-in desk the morning of the meeting. Please make checks payable to Structural Engineers Association of Colorado (SEAC) and bring the check with you to the General Meeting.

GENERAL NOTES - ANNOUNCEMENTS

3rd Annual - Survey on BIM in Structural Engineering

This is the third year of a respected and internationally recognized survey on the topic of Building Information Modeling (BIM) in the profession of Structural Engineering. It is also one of the only surveys of its kind that is conducted by organizations dedicated to the structural engineering profession. The survey considers many key areas of BIM in the profession. It also provides an important opportunity to collectively voice our opinion on the topic of this technology and our profession.

Please take a few moments to participate in the online survey at <http://www.seibim.org/survey2010.htm>

The results of the third annual survey are scheduled to be presented at the 2010 Structures Congress in collaboration with AISC's NASCC in Orlando, Florida in a session on Saturday, May 15, 2010 from 2:15-3:45pm. The session is titled "Building Information Modeling and Management". For more information or to register for the event, visit <http://www.wynjade.com/nascc10/> The results will also be made available to those who take the survey.

The survey is a collaborative effort of the Structural Engineers Association of Texas (SEAoT) Information Technology (IT) Committee on BIM and the Joint Structural Engineering Institute (SEI) - Council of American Structural Engineers (CASE) Committee on Building Information Modeling (BIM). For questions or comments on the survey, please contact Will Ikerd PE at Will@lkerd.com.

The SEA of Texas in Collaboration with The National Joint SEI-CASE BIM Committee



Attendance at March Meeting



March Speaker, Mike Mota



March Sponsor, Encon

We want your *Suggestions*

SEAC wants to hear from you! Do you have ideas/suggestions for this year's Annual Dinner or for future General Meetings? Please contact Ron Hedrick at: rhedrick@jirshedrick.com with any ideas or suggestions.



SEAC 2010 BUDGET	PROPOSED	2009 ACTUAL	2009 BUDGET	2008 ACTUAL
<i>INCOME</i>	2010 BUDGET			
ADVERTISING	\$0.00	\$0.00	\$400.00	\$600.00
FEES: ANNUAL DINNER	\$2,200.00	\$2,250.00	\$2,800.00	\$2,925.00
FEES: BREAKFAST GUESTS	\$250.00	\$0.00		
DUES: BUSINESS PRACTICE COMMITTEE	\$1,000.00	\$1,080.00	\$1,000.00	\$1,000.00
DUES: MEMBERSHIP DUES (210/36)	\$28,000.00	\$29,580.00	\$27,360.00	\$28,950.00
INTEREST INCOME	\$350.00	\$491.54	\$650.00	\$714.98
MISCELLANEOUS	\$0.00	\$0.00		
SALES: BREAKFAST SPONSORS	\$5,000.00	\$4,000.00	\$5,000.00	\$6,000.00
SALES: ANNUAL DINNER SPONSOR	\$0.00	\$0.00	\$0.00	\$0.00
SALES: BUILDING DEPARTMENT SURVEY	\$200.00	\$270.00	\$400.00	\$1,631.00
SALES: SNOW LOAD REPORT	\$500.00	\$1,477.00	\$1,000.00	\$9,762.00
SALES: STANDARDS OF PRACTICE	\$150.00	\$360.00	\$150.00	\$315.00
SALES: WIND LOAD MAP	\$0.00	\$0.00		
FEES: PAST PRESIDENTS BREAKFAST	\$0.00	\$0.00		\$0.00
FALL SEMINAR SPONSOR	\$3,000.00	\$3,500.00	\$3,000.00	\$1,500.00
FALL SEMINAR INCOME	\$5,000.00	\$4,710.00	\$8,000.00	\$12,850.00
TOTAL	\$45,650.00	\$47,718.54	\$49,760.00	\$66,247.98
EXPENSES				
ACCOUNTANT	\$900.00	\$900.00	\$900.00	\$1,593.99
ADMINISTRATIVE ASSISTANT	\$9,000.00	\$9,000.00	\$9,000.00	\$9,000.00
AWARDS	\$650.00	\$459.09	\$650.00	\$756.25
BANK CHARGES	\$0.00	\$24.00		
COMMITTEE EXPENSES	\$500.00	\$231.98	\$250.00	\$0.00
CONTRACT LABOR - Salary Survey	\$900.00	\$2,000.00	\$900.00	\$840.80
FALL SEMINAR	\$5,000.00	\$4,063.11	\$8,000.00	\$11,463.00
IRS NON-PROFIT FILING	\$0.00	\$0.00	\$0.00	\$0.00
MEETINGS: ANNUAL DINNER	\$4,000.00	\$3,863.41	\$6,000.00	\$7,648.81
MEETINGS: BUSINESS PRACTICE	\$1,300.00	\$1,241.49	\$1,300.00	\$1,120.88
MEETINGS: GENERAL MEMBERSHIP	\$16,050.00	\$11,277.39	\$8,000.00	\$10,605.18
MESSENGER SERVICES	\$250.00	\$236.09		
MISCELLANEOUS	\$600.00	\$360.00	\$600.00	\$596.70
NCSEA COMMITTEES	\$500.00	\$0.00	\$1,000.00	\$581.51
NCSEA CONVENTION	\$3,100.00	\$2,638.96	\$3,000.00	\$2,615.74
NCSEA DUES	\$4,500.00	\$4,480.00	\$5,000.00	\$5,024.00
OFFICE SUPPLIES	\$150.00	\$137.13	\$500.00	\$94.67
PAST PRESIDENT'S BREAKFAST	\$0.00	\$0.00	\$0.00	\$0.00
POSTAGE	\$400.00	\$261.53	\$800.00	\$907.09
PRINTING: BUILDING DEPARTMENT SURVEY	\$0.00	\$0.00	\$0.00	
PRINTING: MEMBERSHIP BINDERS	\$225.00	\$0.00	\$225.00	\$136.10
PRINTING: SNOW LOAD	\$0.00	\$0.00	\$0.00	\$4,587.40
QUALIFICATIONS BASED SELECTION	\$0.00	\$0.00	\$0.00	\$1,200.00
WEB SITE	\$2,250.00	\$2,481.50	\$4,500.00	\$344.00
TOTAL	\$50,275.00	\$43,655.68	\$50,625.00	\$59,116.12
NET INCOME	-\$4,625.00	\$4,062.86	-\$865.00	\$7,131.86