



# CONNECTIONS

April 2010 Volume 10 Issue 7

Newsletter of the  
Structural Engineers  
Association of Oregon

## APRIL DINNER MEETING Wednesday, April 28, 2010

### Port of Portland Recent Projects

#### SEAO

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**About the Program:** Large sections of wet snow falling from the glass canopy over the roadway at Portland International Airport during the blizzard of December 2008 caused the failure of several roof trusses above the ticket lobby. Tom Wharton (Port of Portland) and Chad Gilton (KPFF Consulting Engineers) will discuss the damage and its subsequent repair and mitigation.

**About the Speakers:** Tom Wharton joined the Port in 2008. He has ten years of experience in the construction industry and a Bachelor of Science in Civil Engineering from Portland State University.

Chad Gilton is a Professional Engineer and has been with KPFF for four years. He received a Bachelor of Science in Civil Engineering from Texas A&M University and a Master of Science in Structural Engineering from UC San Diego.

#### NOTE THIS IS A DINNER MEETING

**TIME:** Committee Meetings: 4:00pm (Portland location. Please join in!  
See p.3 for additional information)

Check-in and Social Hour: 5:30pm

Dinner: 6:30pm

Program: 7:30pm

#### IN THIS ISSUE:

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March Meeting Recap

2010 OSSC

Golf Tournament

NW Conference

APEGBC Conference

#### LOCATIONS

##### Portland

Governor Hotel, Billiard Room  
614 SW 11th Avenue  
Portland

##### Corvallis (Program webcast)

CH2M Hill  
2300 NW Walnut Blvd  
Corvallis, OR

#### DINNER AND PROGRAM

\$32.00 Pre-paid Member  
\$40.00 Pre-paid Non Member  
\$18.00 Students

\$20.00 Prepaid Member  
\$33.00 Prepaid Non Member  
\$13.00 Students

#### RESERVATIONS — before 5:00pm, Friday, April 23:

Register and pay online at [www.seao.org](http://www.seao.org). May also register by calling or emailing Jane Ellsworth at (503) 753-3075, Email: [jane@seao.org](mailto:jane@seao.org).

#### PDH CREDIT:

One PDH has been recommended for this program

## PRESIDENT'S MESSAGE

By: Jennifer Carlson



I have been enjoying the brief visits of warm spring weather and the promise it brings of our usual beautiful summers here in Oregon. I know we are all hoping the upcoming summer will continue the incremental yet steady small improvements in the economy and our particular business.

I spent last week in a whirlwind cross country business trip. The project I am working on is located in Detroit, Michigan. I grew up in northern Indiana about 200 miles from Detroit. I occasionally traveled to Detroit with my parents to see museums, parks, or visit friends. My childhood memories of Detroit reflect a huge, crowded metropolitan city with wonderful stores and smoke pouring from numerous stacks. I had not been in Detroit for 30 years.

To say the image from my memories has changed is an understatement. The City of Detroit looks more like a war zone or a third world country now. Every other home or commercial building I saw was a burned out shell or had the windows boarded up. Entire blocks of older business sections of the city are vacant with collapsed roofs. The streets are in deplorable condition. I was appalled at what I saw so I did some research. The 1950's were the heyday of the auto industry and the population of Detroit hovered around 1.8 million people. Today the population is 900,000. The current median sales price of a house in Detroit is \$7,000. No- I did not drop a zero there. It is a 4 figure number. The Detroit city council is working on a plan to relocate remaining citizens so they can clear sparsely populated city blocks and turn the land over to agricultural use. The hope is this will generate tax revenue and allow the city to fund schools or keep the water treatment plants running.

I consider myself to be reasonably well informed. I read the newspaper every day, listen to the news on the radio, and keep up with MSN online. I have never read or heard a single news story on the plight of Detroit. Detroit has been suffering a slow death for many years and the media has apparently ignored it. The reasons for Detroit's demise are myriad and complex, but it boils down to one basic fact. Detroit became an unattractive place to do business so the businesses moved out, taking jobs with them.

A recent Oregonian article reported on the City of Portland's plan to revamp regulations for industrial shoreline development along certain sections of the Willamette River. In particular, the City wants to start regulating in-water construction for these water dependent industries. In-water construction is currently strictly regulated and closely monitored by several state and federal agencies to ensure the environment is protected. Additional review and submittal processes proposed by the City will, in my opinion, make an already burdensome and expensive development (and even maintenance) process unbearable. It was noted in the article that Portland water dependent businesses, and the associated 38,000 jobs, must compete with other North West Ports which would not be subject to costs and delays associated with the City of Portland proposed regulations. Considering this proposal is in addition to other deterrents such as recent new taxes imposed on businesses, why would a river related business want to come to or stay in Portland?

I am sure no one in Detroit 30 years ago foresaw the tragic current state of the City even in their worst nightmares. Detroit's situation is the stark reality of the possible results of short sighted public policy. Every citizen in Portland should be aware of what is happening in Detroit. We are not immune.

OK- I will get off my editorial soapbox now. I want to thank Ron Kernan and Josh Richards once more for their presentation on Haiti at the March lunch meeting. The presentation brought this dramatic disaster to life from our unique engineering perspective. The April dinner meeting promises to be eventful for two reasons. First, we will be trying something new to encourage participation on some of SEAO's committees. Certain committees will be holding open meetings for an hour just prior to the start of the dinner meeting to welcome interested members and plan committee activities. We had a great response from volunteers for the seismic committee. We still need members to assist the wind committee in reviewing ASCE 7-10 new wind provisions. Several other committees also need assistance. An email will be coming out in the next few days with more details. Second, the Port of Portland will be giving a presentation on past and current projects. The Port is an economic engine for the Portland area with a wide variety of business concerns and construction experience. I look forward to seeing many of you at the committee meetings and dinner.

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.

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## COMMITTEE UPDATES

### SEAO Committees

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### Young Member Forum

The Young Member Forum was formed to give associate members a forum for networking. Our events are designed to foster an exchange of experience and knowledge amongst our members in a social environment. Each summer, we organize an educational outing focused on one of the many interesting components of our built community. Previous outings have included an inside look at the design challenges of the aerial tram, a tour of a local steel fabricator's shop, and a walking tour of Portland's bridges—all followed by a social hour.

We recently began holding informal monthly happy hours including joint events with our AIA counterparts. They are typically held towards the end of the month at a central downtown Portland location after work.

If you are interested in learning more about the committee, or have suggestions/comments about events, or would like to help plan an event, please contact the committee chair, Ed Quesenberry, at [edq@equilibriumllc.com](mailto:edq@equilibriumllc.com). We would love to hear from you!

Please contact Ciera Speer at [ciera@jgpierson.com](mailto:ciera@jgpierson.com) if you would like to be on the happy hour mailing list.

### Special Inspection Committee

The SEAO Special Inspection/Testing/Structural Observation Task Group is nearing completion of the Matrix for the new OSSC 2010 code requirements. The next meeting will be held on May 4, 2010 at 5:00 pm at the offices of Miller Consulting Engineers.

The Task Group will be reviewing the rough draft of the new matrix for the 2010 OSSC code and updating to any changes by Oregon Amendments. The Task Group is open to any member or interested party which would like to participate in the review of the new matrix.

### Open Committee Meetings April 28th, 4:00pm

This month we're attempting something a little different. In addition to our regular dinner meeting, a number of our SEAO committees will be meeting before dinner. This open format will be an opportunity to join in the committee discussion, meet other committee members, and bring ideas.

If you've considered joining a committee, or just wondered what they do, this is your chance to see them in action!

Even if you don't reside in the Portland area and thought maybe committees were just for those folks in the metro area, I'd encourage you to reconsider. Make the trip to Portland. With committee meetings, social time, dinner and program, the trip should be worthwhile. In the future, there should be opportunities to participate with the committees via conference call.

Currently, we're anticipating the following committees will be meeting at the Governor Hotel ahead of the dinner meeting:

- Emergency Response
- Seismic
- Wind
- Vintage Building
- Snow Load (informational only)
- Legislative
- Website

### Engineers Week Summary

by David Nilles

February 18, 2010 marked the 46<sup>th</sup> anniversary of the Engineers Week High School Program, part of National Engineers Week. As in past years, this year's program featured engineer mentors hosting high-school students for the banquet as well as escorting teachers and students on wide range of field trip options including tours of the Port of Portland Airport Expansion project, Portland bridges and the ODOT Traffic Management Operations Center, and Twelve West Building a LEED certified green building. Student participation was strong this year with over 200 students from local area high schools in attendance.

Professional participants in this year's banquet, once again held at the Lloyd DoubleTree Hotel,

(continued on page 4)

## MARCH MEETING RECAP

Josh Richards and Ron Kernan with KPFF presented their experience in Haiti following the January 12th earthquake. They went as volunteers working with a non-government organization called the Appropriate Infrastructure Development Group (AIDG). AIDG provided food, shelter, transportation, translators, and coordinated their efforts.

On Tuesday, January 12, 2010 at 5 pm, Haiti was hit by an earthquake. The magnitude was 7.0. The duration was approximately 35 seconds. The peak ground acceleration was estimated to be between 0.4 and 0.55g. There were between 200 and 250 thousand casualties with countless more injured. An estimated 150,000 are unaccounted for. The United Nations lost approximately 150 people in Port au Prince, the capitol. An estimated 250,000 homes and 30,000 commercial buildings were destroyed. The majority of the damage was in Port au Prince and westward approximately 40 miles, 20 miles beyond Leogane, and southwest approximately 25 miles to Jacmel.

The majority of structures in Haiti consist of unreinforced block infill wall panels between concrete columns and beams. The roofs are wood framed with corrugated metal deck or constructed as flat slabs when the intent is to expand vertically. There is minimal ductility, no redundancy, often there are vertical, horizontal, or torsional irregularities. There is little or no out of plane support for the walls. There is no building code. There is no quality control for the concrete, block, or mortar. The mortar is often mixed on the ground. Cement is expensive so often the amount is reduced to save money.

The first week they were in the cities on the north side of the island. These included Cap Haitian, Fort Liberte, and Milot. There was no damage in these towns. The primary task in these areas was to inspect UN offices, housing, hospitals, clinics and orphanages to determine their potential to resist an event similar to the one in Port au Prince. The original intent was to do ASCE-31 evaluations on these facilities. The number of buildings made that detailed an effort impossible. The result was doing an abbreviated ASCE-31 on approximately 100 buildings. The buildings in the north would mostly likely suffer the same sort of damage if the same event occurred there.

The next three days were spent in the town of Leogane, west of Port au Prince. It was near the epicenter. Approximately 80-90% of the buildings were damaged or destroyed. The work here consisted of approximately 110 ACT-20 rapid evaluations. They were shadowed by teams of local engineers who observed the ACT-20 process. They experienced a 4.7 aftershock about 1:30 in the morning on their first night in Leogane. Very little sleep was had afterwards.

The last three days were spent in Port au Prince doing ATC-20 rapid evaluations on schools and houses. The capitol city has approximately 1.8 million residents in the metro area and 3.3 million including the surrounding areas. Most of the casualties occurred here. Many mid-rise

buildings collapsed. The devastation on top of the poverty was overwhelming.

KPFF sponsored our trip to Haiti and had two engineers in the country two weeks after the earthquake. Subsequent two member teams from KPFF are continuing to do ACT-20 detailed evaluations and provide training for local engineers and builders. Over 20 engineers have been involved. One trip included masons sponsored by Hoffman Construction. They did training of Haitian masons in a technique called confined masonry. This was developed in Peru. It uses the same materials but offsets blocks at the block column joint to allow for additional interlocking. The manual for this method has been translated from Spanish and English to Creole for distribution to assist as the Haitian's begin to rebuild.

*Question of the afternoon: Why was Ron wearing a Bluetooth headset during the presentation?*

*Answer: Ron was helping us test our webcast. As part of this, the audio portion uses the Bluetooth as a microphone. In the future we're looking at ways to possibly attach the Bluetooth like a lapel microphone. Thanks for helping with our test Ron!*

## COMMITTEE UPDATES (CONTINUED FROM P.3)

included a wide range of engineering societies, employers and engineering schools. The SEAO booth was manned by both myself and Scott Walker and featured projects and materials submitted by SEAO member firms. Scott and I had the pleasure of discussing a wide range of topics with students who dropped by including: college prep, engineering schools, career opportunities, various tools of the trade, and the joys, projects and duties that come with practicing our profession. It is truly motivating to see the next generation of engineers striving to achieve their goals!

This year's banquet keynote speaker was Matthew Markstaller, Senior Program Manager for Research & Development for Daimler Trucks North America, who presented on-going wind tunnel research for Freightliner trucks.

The Engineers Week High School program is made possible by the continuing support of local practicing engineers, employers, and the various engineering societies including ASCE and SEAO. Thank you to all members who hosted a student or helped to make this years program a success, I hope to see you all again next year. And to those who did not participate, I would encourage you to host a student next year. Look for an announcement in next January's newsletter.



## BIM SURVEY

### 3rd Annual Survey on BIM in Structural Engineering

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

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@Ikerd.com](mailto:Will@Ikerd.com)

## Mark Your Calendars...

**April 28**, Governor Hotel

**4:00 pm—Committee Meetings**

**5:30 pm—Social Hour**

**6:30 pm—Dinner Meeting— *Port of Portland speaking on recent projects***

**May 26**, Governor Hotel

**Lunch Meeting—*Sustainability***

**October 27**, Governor Hotel

**Committee Meetings**

**Dinner Meeting—*tba***

## NEW 2010 OSSC IS HERE

The new 2010 Oregon Structural Specialty Code is now available. It can be accessed online without cost at: [http://ecodes.biz/ecodes\\_support/free\\_resources/Oregon/10\\_Structural/10\\_ORStructural\\_main.html](http://ecodes.biz/ecodes_support/free_resources/Oregon/10_Structural/10_ORStructural_main.html)

However, be aware that the online version cannot be saved or printed. It is a read only .pdf format.

For printed hard copies, you will need to purchase codes. Online, the International Code Council offers them for purchase through their bookstore at [www.iccsafe.org](http://www.iccsafe.org).

This code becomes effective July 1, 2010, though a grace period is expected in most areas. Also available and anticipated with the same adoption date are the 2010 Fire Code, Mechanical Code, and Energy Conservation Code.

## JOB OPPORTUNITIES

### **Structural Engineering Position – Salem, Oregon**

BMGP Engineers, Inc. is a consulting structural engineering firm with expert knowledge in design, forensic evaluation and seismic rehabilitation. We are a full service firm with a wide variety of challenging projects with custom residential, commercial and industrial clients. We promote creativity, innovation, efficiency and integrity. Our growth-oriented company is seeking an additional structural engineer with a minimum of 0-2 years of experience and has passed the Fundamentals of Engineering (FE) exam with the State of Oregon. Applicants must be proficient in the design of wood, steel, concrete and masonry as well as possess excellent verbal and written communication skills. We are searching for an individual who will excel in this diverse work environment. We offer a competitive salary with benefits that include health insurance and profit sharing. Please submit your cover letter, resume, college transcripts and references to 1045 13<sup>th</sup> St. SE, Salem, OR 97302 or e-mail [admin@bmgpengineers.com](mailto:admin@bmgpengineers.com).

### **Structural Engineering Position – Portland, Oregon**

URS Corporation, is currently looking for a Staff Structural Engineer in our Portland, OR office. Our structural group is seeking a dynamic and motivated structural engineer to work on a variety of interesting and complex projects, including a diverse mix of public sector, solid waste, ports and marine facilities, transportation and seismic upgrade projects. Responsibilities will include: Performing structural analysis and design on industrial buildings and non-building structures. Structural designs will include reinforced concrete structure design, steel structure design, seismic design and detailing for new buildings and seismic retrofit of existing building. Task management for multi-discipline projects, Preparing a variety of reports and correspondence related to project activities. Experience: Min. 6 years experience in structural analysis, design of industrial and commercial buildings and non-building structures. Experience to include steel and reinforced concrete design. Construction and/or field experience necessary. Excellent verbal/written communication and computer skills, including RISA 3D, Retain Pro, PCA Column, and ETABS programs. URS Corporation is an Equal Opportunity Employer and strongly supports diversity in our workforce. M/F/V/D. We offer competitive salaries and a comprehensive benefits package. For immediate consideration please submit your resume to [Katie\\_Poehler@urscorp.com](mailto:Katie_Poehler@urscorp.com).