

SEA-WI

Newsletter



Marriott Downtown Milwaukee

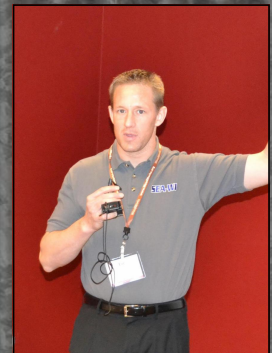
Summer 2013

SEA-WI Technical Conference

by Jason Gross

On April 26, 2013, the SEA-WI organization held its third annual technical conference in Pewaukee. The event drew structural engineers from each of the four geographic regions of SEA-WI and boasted nearly 60 engineers. This was the first time the event was scheduled for an entire day, and special thanks to Eric Fink for organizing the conference.

Sarah Frecska, of Pierce Engineers, gave the first presentation of on the construction of the Marriott Hotel in Downtown Milwaukee. The Marriott consists of a new 9 story post-tensioned building fit in between two existing historic buildings, which required selective demolition. Various buildings adjacent to the site were occupied or required special considerations. A practical approach was presented on how vibration monitoring equipment was used and how to specify a vibration log prior to and during construction. This was important in order to defend an allegation from a neighboring site, which claimed damage due to demolition vibrations on certain dates. Sarah shared important lessons learned by observing demolition contractors on how they try easy (and inherently loud) methods first, to test the boundaries of what vibrations are excessive. And, she shared an interesting photo of a front end loader with jack hammer attachment demolishing an elevated slab, which was currently being used to support the loader and user itself. Fortunately, the at-risk contractor was stopped and no one was reported being hurt during the project demolition or construction.



Eric Fink



Sarah Frecska



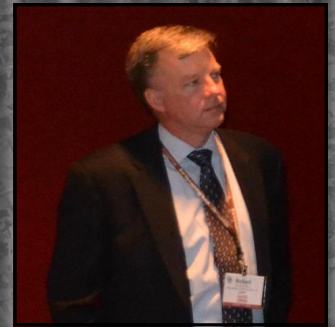


SEA-WI Technical Conference - Continued

Richard Walther and Jonathan McGormley from Wiss, Janney, Elstner Associates (WJE) gave a presentation on the investigation from the I-35W Bridge collapse over the Mississippi River in Minnesota. They reported how the failure on August 1, 2007 was a result of numerous factors including: the gusset plates were originally under-designed at $\frac{1}{2}$ " thick, the dead load was increased 20% on the driving surface by repeated repaving, and that construction material and equipment was placed above the structure's weakest point at the time of collapse. They also explained what new inspection and analytical procedures were put in place after this incident investigation.



Jason Ericksen, of SK Ghosh Associates, gave a presentation on the new Wind Provisions found in ASCE-7-10. The wind speed tables and design pressures have been updated and revised so that comparison to seismic loads can be done without multiplying load combination values. Jason provided an explanation and example for the new simplified version of the general analytical procedure under Method 2, applicable for all building heights. Also included were shortcut methods for quickly determining wind pressures under canopies and parapets.



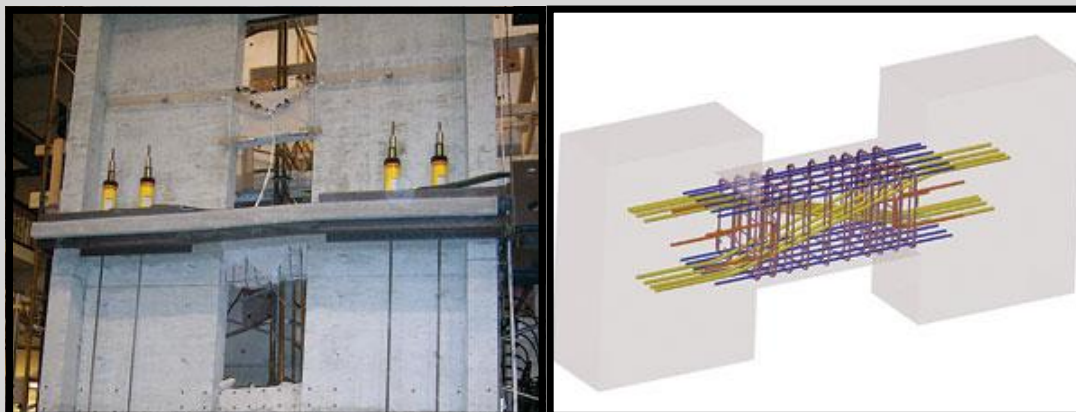
Richard Walther



Jonathan McGormley

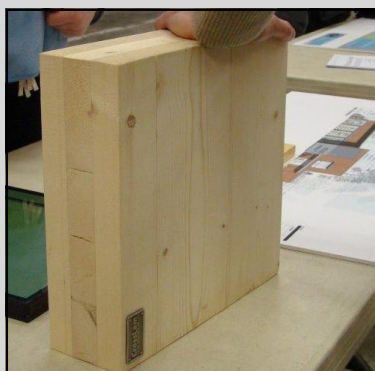


Jason Ericksen



SEA-WI Technical Conference - Continued

Gustavo Parra-Montesinos, professor at UW-Madison, gave a presentation on the structural uses for fiber reinforced concrete. He shared with the audience the latest research of using steel fibers to handle temperature and shrinkage forces and shear forces. He led the development within the committees of ACI to allow the use of steel fibers in highly congested areas of reinforcing for seismic links and fuses. Laboratory testing has revealed that steel-fiber reinforcing can eliminate 40% of rebar in link beams in seismic frames. The latest ACI 318-11 code recognizes this use of steel fibers in concrete and in allows its use in supplementing shear reinforcing in certain cases. Other concrete codes, such as in Europe and Japan, have expanded the use of fibers, and Gustavo is hopeful that this trend will continue with ACI. Steel fiber reinforcement has applications in precast concrete to handle shear transfer at anchorage zones and to create deeper sections.



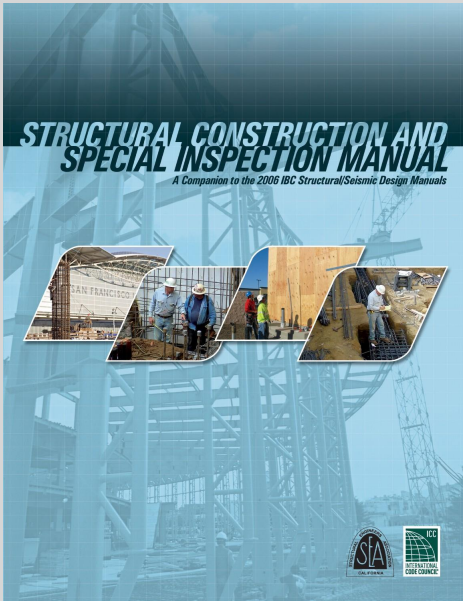
The technical conference concluded with a presentation by Archie Landreman, from Woodworks, giving a presentation on the use of Cross Laminated Timber (CLT) in construction. Cross Laminated Timbers are made by placing layers of dimensional lumber in alternating directions and gluing them in a press 40 feet long by 10 feet wide, creating members up to 12" wide. The principles of plywood are extrapolated to fabricate columns, beams, and solid walls that function like timbers. Archie presented buildings made out of CLT throughout Europe and discussed the development of the US version of the CLT handbook.



**Gustavo
Parra-Montesinos**



Archie Landreman



City of Milwaukee - Special Inspections Update by Wayne Vandenberg

The Legislative Committee of the SEA-WI recently submitted to The City of Milwaukee, Department of Neighborhood Services, the Special Inspections Manual – 2013 Edition. With recent building failure issues, including fatalities, the City DNS approached SEA-WI to assist them with the development of a Special Inspections program that would provide a method of inspections normally covered by Chapter 17 of the IBC. The Committee reviewed documents from several States, Municipalities, as well as IBC and CASE, to develop the Manual. The Manual is written as a tool to explain the history of Special Inspections, and give direction and guidelines for all parties in the construction process from architects and engineers, to contractors, suppliers, and the City plan reviewers and building inspectors.

The final document was submitted to the City after a couple rounds of review from both the DNS and our Committee. The Final document will hopefully be published later this year by the City. Still to be coordinated are the finalizing of format of forms for record keeping, and clarification through a flow chart of responsibilities and timing/sequences of those responsibilities.

(Editorial note: the referenced photo above is for the ICC Special Inspections Manual by NCSEA and not the City of Milwaukee Special Inspection Manual. Before I googled it, I never heard of it. J.G.)

SEA-WI Board of Directors ***by Sam Rubenzer***

Thanks to all of the SEAWI members that have served on the Board of Directors over the past year.

Sam Rubenzer – President
Bob Steckel – Secretary
Eric Fink – NW Director
John Roob – NE Director

Newly Elected Officers

Eric Fink – President Elect

Eric Fink, PE, SE has been an active member of SEA-WI and has completed his two year term as the Northwest Director. He has contributed to the growth of the organization by serving as the annual conference committee chair from 2011 to 2013. During that time, the conference has grown from 40 to 60 attendees.

Eric is currently a senior project engineer at Erdman and has 10 years of experience in structural engineering. At Erdman, he provides design support to architects, MEP engineers, structural steel detailers and their fabricator, cold formed steel stud panel detailers, and the field construction team. During the last six years he has been directly involved in the implementation of building information modeling. Eric is a licensed structural engineer (SE) in the state of Illinois, and a professional engineer (PE) in the state of Wisconsin. He has a bachelor's degree in civil engineering at Iowa State University and a master's of science in structural engineering from the University of Wisconsin-Madison.

Jim Driscoll – Secretary

Jim is an Associate at HGA Architects and Engineers in Milwaukee and has over 8 years of structural engineering experience. Jim earned a bachelor's degree from the University of Wisconsin - Madison and a master's degree from the Milwaukee School of Engineering and he has been a licensed professional engineer in the state of Wisconsin since 2010. Jim has worked on multiple projects for clients in municipal, corporate, healthcare, and residential market sectors. In addition to designing new structures, Jim has experience inspecting and evaluating existing facades and building systems.

Jim has been a member of SEA Wisconsin for several years and is excited to pursue a more active role in the organization.

SEA-WI Board of Directors **Continued**

Michael Marhefke, PE – NE Director

Michael has over 25 years of structural engineering experience working on a wide variety of projects of all sizes in various market sectors. He has worked with diverse groups of people, both domestic and foreign. He has traveled throughout the U.S. and abroad, including Brazil, to meet both project and client's needs.

He has developed strong leadership & communication skills from his engineering career as well as from his master's graduate education at Marquette University. He is a passionate ambassador for structural engineering. He has been an active volunteer speaking about structural engineering and a career in structural engineering to different schools & educational organizations within the Fox Valley and WI for the past 25 years. Currently he serves as an executive team member of the Fox Cities Chamber of Commerce & CESA 6 F.O.C.U.S. group (Fostering Our Communities Understanding of Stem). FOCUS is a collaborative effort between the business and the education community that effectively interests and prepares students for the STEM workforce. FOCUS supports existing STEM programs in our community and bridges the gap for ongoing student involvement.

Michael is excited to be a leader, mentor and play an active role to fulfill the needs of the position for Northeast Director within SEA-WI.

William J. Boettcher, P. E. – NW Director

William is president of Lien & Peterson Architects, Inc. in Eau Claire, Wisconsin. He has been an owner since 1998 and became President in 2004. William has provided services in structural design and administration for twenty-two years. He has earned both BSCE and MSCE degrees from Michigan Technological University and an MBA from UW Eau Claire. Projects have included new construction, addition, and remodeling for industrial, institutional, educational, public, commercial, and residential facilities. Work includes design development, project design, construction documentation and contract administration for these projects. An area of special interest is working on hydro-electric power related services. He has worked in this field since 1995. William is registered in Wisconsin since 1995.

As a firm, Lien & Peterson has been dedicated to providing opportunities to young people in our profession. We have had high school interns, architectural interns, and structural interns. We also encourage our staff to pursue licensure and provide the means and time necessary for achieving that goal.