



The American Institute of Steel Construction & The Pacific Northwest Steel Fabricators' Association



Invite you to attend this breakfast program on:
TR Higgins Lecture: SCBF Gusset Plate Connection Design
Presented by
Charles Roeder, PE, Professor of Civil Engineering - University of Washington

Portland Meeting Wednesday November 9, 2011

Crowne Plaza Portland Convention Center
 1441 NE 2nd Avenue, Portland, OR 97232

– OR –

Seattle Meeting Thursday November 10, 2011

Hilton Seattle Airport and Conference Center
 17620 International Blvd., Seattle, WA 98188

Schedule: 7:30 am Sign-in & Coffee • 8:00 am – Breakfast & Program Begins • 8:00 am – 9:30 am Program
Cost: \$20 if registered by October 28, \$30 if registered after October 28

TR Higgins Paper Presentation – Performance-based seismic design (PBSD) produces structures that meet multiple performance objectives. Special concentrically braced frames (SCBFs) are stiff, strong structures that meet PBSD serviceability limit states, but stable cyclic inelastic behavior is needed to satisfy PBSD life safety and collapse prevention limit states. This requires buckling, tensile yielding, and post-buckling inelastic deformation of the brace. Current SCBF design provisions attempt to ensure good inelastic performance by controlling the brace slenderness and connection geometry and by providing adequate connection resistance, but this approach is flawed. A research study was completed to develop improved PBSD models for SCBF gusset plate connection design. More than 35 full scale SCBF systems were experimentally evaluated, and numerous nonlinear analyses were completed. A proposed design procedure, which balances desirable yield mechanisms in the brace and connection and restricts undesirable failure modes, was developed. This work will be summarized for this presentation along with gusset plate connection design recommendations.

Charles Roeder is a Professor of Civil Engineering at the University of Washington. He has a BSCE from the University of Colorado, Boulder, an MSCE from the University of Illinois, Urbana/Champaign, and a PhD from the University of California, Berkeley. He is a registered PE in Washington and Colorado. He has taught at the University of Washington for 34 years, and has supervised the thesis research of approximately 100 graduate students. He has 9 years prior engineering experience in building construction and design of offshore structures. He has performed a wide range of research related to steel and composite structures, and has received the ASCE 2010 Earnest E. Howard Award, the 1984 ASCE Raymond Reese Research Prize, the 1979 ASCE Croes Medal, the 2002 Puget Sound Engineers Council Academic Engineer of the Year, the 2002 AISC Special Achievement Award, and the 2011 AISC Higgins Lectureship.

We invite you to attend this presentation and to extend the invitation to your colleagues—engineers, architects, general contractors, and owners. Take advantage of this opportunity to dialog about how you can work together to provide quality work, and to network with local fabricators. All engineers will receive a (CEU) continuing education certificate for attending.

PNSFA/AISC 2011 BREAKFAST MEETING REGISTRATION FORM

Please select one: Portland Meeting Nov. 9 **OR** Seattle Meeting Nov. 10 **OR** Both Portland & Seattle Meetings

Cost: \$20 if registered by October 28, \$30 if registered after October 28

Attendee Name(s):

1. _____ 3. _____
 2. _____ 4. _____

Please check: Engineer, Architect or Other Specifier PNSFA Member

Company: _____ Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

Do you have any dietary restrictions? _____

_____ attendees @ \$ _____ each = _____ TOTAL DUE

Make checks payable to PNSFA or pay by credit card: VISA MasterCard AMEX

Card #: _____ Exp. Date: _____ Amount Authorized: \$ _____

Name on Card: _____ Signature: _____

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PNSFA Meeting Policies: Pre-payment for registration is required. Space is limited, early registration is encouraged. Cancellations received on or after October 28 as well as no-shows to the meeting will not receive a refund.

Send to PNSFA at 147 SE 102nd Ave., Portland, OR 97216 or FAX to 503.253.9172

* Due to credit card security policies, we cannot accept PDF registrations with credit card information or phone call registrations to the PNSFA office—please fax or mail in your registrations to PNSFA

Questions? Call PNSFA at 503.253.9030 or email us at info@pnsfa.org