



SEAI Mission Statement

“To promote and enhance the Structural Engineering profession in Idaho by educating the public about the activities of Structural Engineers and their benefit to society and by providing professional development and support to SEAI members that is relevant, reliable, and inspirational to modern engineering practices.”

Message From the Board

By Nick McDowell, Vice President



Greetings everyone! I wanted to take a moment in this month’s newsletter to discuss the use of software in our industry. In recent years, innovations in 3D modeling, software interoperability, and BIM technology offer greater opportunities for efficiency and complex structural analysis. Now, more than ever, structural engineers have the capacity to quickly share information with various project disciplines in real time by use of leading edge software. Furthermore, embracing this technology only seems inevitable if we are to remain competitive in the market place. But in light of the many advances our industry is making in computer software, I’d like to acknowledge a significant risk associated with misuse of computers by structural engineers.

An important lesson taught to me starting out in my career was the importance of engineers understanding fundamental engineering concepts before using computers to *aid* in structural design. Before software is used to perform design, underlying software assumptions and structural performance should be thoroughly understood. Otherwise, the familiar phrase “garbage in, garbage out” eloquently describes this situation. I recently came across an article “Misuse of Computers by Structural Engineers – A Clear and Present Danger” by Leroy Emkin and I wanted to paraphrase some tips for avoiding misuse of computers from that article.

1. Understand the basic principles of mathematics, science, mechanics, material behavior, system behavior, modeling techniques, analysis methods, design procedures and codes, error

assessment, risk analysis, codes of ethics, and ethical engineering practice.

2. Understand the absolute requirement for engineers to be able to engineer without computers.
3. Be skeptical of computers, never ever use computer results without extensive validation, and always assume computer displayed results are wrong until proven correct by the engineer.
4. “Know” the answer and merely use the computer to fine tune the solution.
5. Deglorify the computer, and glorify knowledge and experience and the need to be thoroughly familiar with all the details of engineering system behavior, modeling, theory, and practice.
6. Recognize that less experienced engineers must develop strong engineering skills without the aid of computers before using computers as powerful engineering modeling, analysis, and design tools.
7. Recognize that only the most experienced and knowledgeable engineers are qualified to use computers as a tool for engineering modeling, analysis, and design.
8. Recognize that *only* engineers engineer, and that computers *do not*.

I think this is an invaluable message for EITs; however, it also merits reminding seasoned engineers at any stage in their careers. Computers can be an incredibly powerful tool, but to quote from spider-man, “with great power, comes great responsibility.”

A link to the article “Misuse of Computers by Structural Engineers – A Clear and Present Danger” is included below.

https://www.sefindia.org/forum/files/mis_use_computer_152.pdf

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SEAI MONTHLY LUNCHEON

Topic: Testing and Usage of SidePlate Field Bolted Moment Frame Connection

Date: Thursday, 11/16/17

Time: Social—11:45 pm
Lunch & program—12 pm

Location: Cottonwood Grille
913 W. River St.
Boise, ID 83702

Cost: Member—\$20
Non-member—\$25

Speaker: Teri Ottens / QBS Council

QUESTIONS TO NIC PEÑA

nicolas.pena@kpff.com

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Members — \$20 — [Pay Here](#)
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SidePlate Bolted Moment Connection System

Speaker Bio:

Tim Carroll, P.E.
Northwestern Regional Engineer

SidePlate Systems, Inc.
Salt Lake City, UT
435-830-1579
tcarroll@sideplate.com



Tim Carroll is a licensed Professional Engineer in the State of Utah. He is the Northwest Regional Engineer for SidePlate Systems, tasked with educating Structural Engineers, Architects, General Contractors, Fabricators, and Erectors on the benefits of the SidePlate connection technology.

Tim obtained his Bachelor's and Master's degrees in Civil Engineering with emphasis in Structural Engineering from Utah State University in Logan, UT. Tim has been involved in the design of numerous steel structures within Utah and Virginia. Tim has worked as a practicing engineer in the state of Virginia from 2005-2011 and in the state of Utah from 2011-2016.

Presentation Overview:

The ANSI/AISC 341 Provisions (Seismic Provisions) establish the performance criteria for steel frame connections in a Special Moment Frame (SMF). Since the company's inception in 1995, SidePlate connections have undergone nearly 40 full-scale tests carried out over the years. These tests are carried out by a 3rd party, and the results consistently prove that our designs far exceed the minimum requirements established by the code.

This presentation will be focused on the testing program, per the AISC 341 Provision, of SidePlate's All-Field Bolted Moment Frame connection. Some of the technical aspects of the connection will be discussed as well as how SidePlate achieves its superior performance by showing actual testing video. The presentation will conclude with cost studies showing the economic benefit of the SidePlate Connection versus other available Lateral Force Resisting Systems. 📌



Code Corner

2309

Wood Frame Construction Manual

CHANGE TYPE: Addition

CHANGE SUMMARY: Section 2309 has been added to reference the American Wood Council's (AWC) *Wood Frame Construction Manual* (WFCM) for structural design of wood frame buildings assigned to Risk Category I or II.

2015 CODE: 2301.2 General Design Requirements. The design of structural elements or systems, constructed partially or wholly of wood or wood-based products, shall be in accordance with one of the following methods:

1. Allowable stress design in accordance with Sections 2304, 2305 and 2306.
2. Load and resistance factor design in accordance with Sections 2304, 2305, and 2307.
3. Conventional light-frame construction in accordance with Sections 2304 and 2308.

Exception: Buildings designed in accordance with the provisions of the AF&PA WFCM shall be deemed to meet the requirements of the provisions of Section 2308.
4. AWC WFCM in accordance with Section 2309.
- 4.5. The design and construction of log structures shall be in accordance with the provisions of ICC 400.

SECTION 2309

WOOD FRAME CONSTRUCTION MANUAL

2309.1 Wood Frame Construction Manual. Structural design in accordance with the AWC WFCM shall be permitted for buildings assigned to Risk Category I or II subject to the limitations of Section 1.1.3 of the AWC WFCM and the load assumptions contained therein. Structural elements beyond these limitations shall be designed in accordance with accepted engineering practice.



Photo Courtesy of American Wood Council

The 2015 Edition of the *Wood Frame Construction Manual*

CHANGE SIGNIFICANCE: The *Wood Frame Construction Manual* (WFCM) is an ANSI standard developed by American Wood Council (AWC) technical committees that contains both engineering criteria and engineered prescriptive provisions for wood-frame buildings that may be used for the design of wood-frame structures within its scope. Although the WFCM provisions are intended primarily for detached one- and two- family dwellings due to the floor live load assumption associated with those occupancies, many of the provisions for specific geographic wind, seismic and snow loads are applicable to other types of buildings. For example, wind provisions are specifically addressed in the WFCM in regard to roof sheathing/wall sheathing sizing, the fastening schedule, uplift straps, shear anchorage, shear wall lengths and wall studs for out-of-plane wind loads, and are applicable to other occupancies within the load limitations of the WFCM tables. Similarly, roof rafter size and spacing for heavy snow loads, as well as shear wall lengths and anchorage for seismic considerations, are applicable within the load limitations of the WFCM tables. Any conditions that are outside the scope of the WFCM limitations or tabulated requirements, such as floor joist design for 60-psf loading and the design of supporting gravity elements for the additional floor live load, are beyond the applicability of the WFCM and must be designed in accordance with accepted engineering practice. The reference to the WFCM as an alternative in Section 2308.1 has been deleted because it may lead to confusion about the applicability. It is more appropriate to use the applicability limits within the WFCM itself rather than the limits for conventional construction in Section 2308.2. 📖



This excerpt is from the Significant Changes to the International Building Code, authored by John Henry, PE, Jay Woodward and Doug Thornburg, AIA. The book is available at shop.iccsafe.org. Use ID # 4000512.

Community Involvement Opportunities

Boise Women in AEC

The newly-formed Boise Women in AEC group is looking for Founding Sponsors as the organization mobilizes for some ambitious goals in 2018. Founding Sponsors will receive membership discounts and other benefits. See the link below for more information about the group's mission and upcoming events.

Contact Katie Walker or Ashley Thompson of SEAI if your company is interested in learning more about sponsoring.

<https://sites.google.com/view/boisewomeninaec>





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

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UPCOMING EVENTS

NW Seminar on Significant Changes to ASCE 7-16

November 16, 2017 from 8:00am–5:00pm
Speakers: S.K. Ghosh and Andrew Taylor, KPFF Seattle
Hyatt House Portland Downtown
Price: \$695 ASCE members; \$795 ASCE non-members

15% discount for SEA members, using Code: SIG15

Registration questions to Sandra Hyde, shyde@iccsafe.org.

SEAI Winter Seminar: Lateral Design and Analysis Considerations

December 6, 2017 from 8:00am–5:00pm
Hyatt Place Downtown - 1024 W Bannock Street
\$150 for SEAI Members and \$175 for non-members

See page 6 for additional information!

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SEAI Winter Seminar

Topic: Lateral Design and Analysis Considerations

Date: December 6, 2017

Time: 8:00am–5:00pm

Location: Hyatt Place Downtown
1024 W Bannock St
Boise, ID 83702

Cost: Member—\$150
Non-member—\$175

Speakers: John Hooper / MKA
Donald R. Scott / PCS

Contact Ashley Thompson with questions:
Ashley.Thompson@kpff.com

Sign Up Using PayPal Links Below:

Members — \$150 — [Members Via PayPal](#)

Non-Members — \$175 — [Non-members Via PayPal](#)

Lateral Design and Analysis Considerations

Presentation Overview:

The chairmen of the ASCE 7 seismic and wind subcommittees, John Hooper and Don Scott, respectively, will present on lateral analysis and design considerations. See their information below. There is **limited seating** so make sure to sign up soon (link on the left). This seminar will count towards 7 PDH's.



John Hooper, Magnusson Klemencic Associates



Don Scott, PCS Structural Solutions

Presenters:

John Hooper is a Senior Principal and the Director of Earthquake Engineering at Magnusson Klemencic Associates, a consulting structural and civil engineering firm in Seattle, Washington. He received his Bachelor of Civil Engineering from Seattle University and a Master of Science from the University of California at Berkeley.

John has over 30 years of engineering experience in the fields of renovation, earthquake engineering, and structural analysis. He is Chair of the American Society of Civil Engineers (ASCE 7) Seismic Subcommittee and is a member of the Main Committee.

John has been involved in the majority of MKA's Performance-Based Seismic high-rise designs over the past 15 years and has been part of the Project Technical Committee responsible for developing the FEMA P-58 Seismic Performance Assessment of Buildings Methodology. 📄

Donald R. Scott, S.E., F.SEI, F.ASCE, is the Vice President and Director of Engineering at PCS Structural Solutions and has been a Principal of the firm since 1986. He has led many of the firm's educational, commercial, institutional and private projects for new and renovated construction. Don's proficiency in high-end structural analysis is a strong resource at PCS Structural Solutions, a 50-person firm with offices in both Tacoma and Seattle, Washington. Don is a civil and structural engineering graduate of the University of Idaho with civil and structural engineering licenses in Washington and seven other states.

Don has authored many technical publications and has presented numerous seminars and webinars for ASCE/SEI and NCSEA on wind design throughout the country. He has been a member of the ASCE 7 Wind Load Committee since 1996, shaping future IBC provisions for wind design, and currently serves as Chairman. He is also a member of the ASCE 7 General Provisions committee, a member of the ASCE 7 Steering Committee, Chairman of the NCSEA Wind Committee, former Chair of the SEAW Wind Load Committee, and current Chairman of the NIST Community Resiliency Panel Buildings and Facilities Committee. 📄

City of Boise Proposed Building Codes: Stakeholder Letter



PLANNING AND DEVELOPMENT SERVICES

MAYOR: David H. Bieter | DIRECTOR: Derick O'Neill

October 23, 2017

Stakeholders,

Idaho Code allows local jurisdictions to adopt local amendments to their building codes beyond the minimum state code with good cause, having at least an equivalent level of protection as state code and with notification to stakeholders a minimum of 30 days prior to a public hearing that is required to be held on the proposed amendments.

The City of Boise is proposing to adopt updated building codes to become effective on January 1, 2018. Updates to the codes include the 2015 *International Building Code*, the 2015 *International Existing Building Code*, the 2015 *International Energy Conservation Code* and amendment to adopt the 2015 *International Residential Code*.

Some of the amendment items requiring notification and a public hearing include:

- An amendment to adopt the 2015 edition of the *International Residential Code*, including adopting Appendix S Strawbale Construction, and adding a new Appendix V Tiny Homes into the code. Amendments also include the residential energy provisions as outlined below that are also replicated in this code.
- Deleting state amendments rolling back the residential energy provisions of the 2015 *International Energy Conservation Code* to the 2009 code levels. Amendment for the air leakage rate to not exceed 4 air changes per hour (ACH). Amendments referencing the latest standard for the blower door test and duct blaster test. Amendments to the new Energy Rating Index (ERI) option (also known as HERS Rating) referencing the latest standard and amending the ERI Score to be 61 or less for equivalency in meeting the energy code.

The City of Boise Building Code Board of Appeals has reviewed the proposed amendments, recommending approval to City Council. Copies of draft ordinances with amendments, good cause documents and other supporting documents are included. Members of your organization are encouraged to review and comment on the proposed ordinances in person or through correspondence with the City. Avenues available for you to make comments are:

- Contact Jason Blais, Building Official, at (208) 608-7097, jblais@cityofboise.org, with any questions, comments or concerns. Written correspondence can also be mailed in addressed to Jason Blais, Building Official, Planning & Development Services, City of Boise, P.O. Box 500, Boise, ID, 83701.
- The public hearing required by Idaho Code, is scheduled for December 12, 2017, at 6:00 pm in the City Council Chambers on the third floor of City Hall.