

# Structural Engineers of NH

## November 2005



*Serving New Hampshire*

**Next Meeting**

Thursday

November 17, 2005

**Site Class  
Determination and  
Structural  
Considerations for  
Seismic Design Using  
IBC**

Red Hook Brewery  
Portsmouth, NH

### SENH PRESIDENT'S LETTER...

The November meeting will feature Dominic Kelly, P.E. presenting information on the Structural Considerations for Seismic Design using IBC. This promises to be an informative meeting presented by an expert in the field. More information is included later in the newsletter.

#### **New Hampshire State Building Code Review Board**

The New Hampshire State Building Code Review Board met recently after a summer break. Considering current events, the State Building Code Review Board is studying the adoption of Appendix G, "Flood Resistant Construction", of the International Building Code (IBC). Another sub-committee is studying the adoption of the International Existing Building Code.

A Senate sub-committee is studying the adoption of the International Residential Code. Senator Robert Clegg, will be sponsoring a bill to adopt the IRC Code in New Hampshire. The bill expected to be up for vote early in the 2006 legislative session.

The State Building Code Review Board's website is being revamped to make it easier to navigate; it should be on-line shortly. The new website should make finding Code amendments easier and will include links to various organizations, such as SENH. The CRREL/SENH report on New Hampshire ground snow load values is linked as a reference document, but is still not mandated. You can view all the current State Building Codes, amendments and meeting minutes by visiting the board's web site <http://www.nh.gov/safety/bldgcode/>.

Contact Joel Fisher at Fisher Engineering, PC, 528-7641 or [fisher@metrocast.net](mailto:fisher@metrocast.net), if you have any questions or comments regarding the Board's activities, or any comments on the possible adoption of Appendix G of IBC or the International Existing Building Code.

#### **New Hampshire Legislature**

As noted above, the IRC code is being considered for adoption by the New Hampshire Legislature. We are also aware that of another bill that proposes to form a committee to study the establishment of a general business license to replace the licensure of trades and professions. The SENH Board will be keeping abreast of the status of these bills and will inform our membership as they move through the process.

#### **Upcoming Seminars**

In an effort to keep our members informed of upcoming seminars, the SENH website has added a page with information on upcoming seminars. Visit [http://www.senh.org/PDH\\_Seminars/PDH\\_Seminars.htm](http://www.senh.org/PDH_Seminars/PDH_Seminars.htm) to see a list of upcoming seminars in our area. If you know of a seminar that will be occurring in the New England area that would be of interest to our members, please email the information to [rsbusby@hotmail.com](mailto:rsbusby@hotmail.com) with the subject "SENH - Seminar". Please check to see that the seminar is not already posted and include a website link if possible.



Member of



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**Public Relations Committee**

The Public Relations Committee will be holding its first meeting shortly. The purpose of the Public Relations Committee is to raise the profile of structural engineers in the state of NH amongst Government Agencies, Architects and other Design Professionals, the General Public, and the Educational Community. The committee will also identify opportunities, coordinate member resources, develop educational materials, and disseminate them via the media, the web, and through civic groups and educational institutions.

If you have ideas on advancing the visibility of Structural Engineering, please pass them on to swjohnson@vhb.com and they will be forwarded to the committee.

**NCSEA Sustaining Membership Drive**

Emile W.J. Troup, P.E., SECB NCSEA, Coordinator of Vendor Relations, is asking for help in increasing the financial support provided by the NCSEA Sustaining Membership Program. Currently there are 22 Sustaining Members, all of whom are individual members of Member Organizations, although that is not a requirement.

As a Sustaining Member you will be supporting NCSEA and its membership programs, including the all-important work of the Committees. NCSEA will provide a link to your firm's name on the website and there will be a listing of all Sustaining Members in one issue of STRUCTURE magazine this fiscal year. Please join by completing the application found on the NCSEA website and send it to the Chicago office. (Current members are listed there as well.) If you have any questions please contact Emile by e-mail SteelStruk@aol.com or by telephone at 781-828-9408, or by cell at 617-312-1801.

**Hurricane Katrina Update**

The Board wishes to thank those members who volunteered to be available on short notice to assist with building inspections in the wake of Hurricane Katrina. It now appears that this support may not be needed; however, this event and the ensuing effort to mobilize engineer reservists has again highlighted the need to have a plan in advance of an emergency. Tom French, the chairman of our Office of Emergency Management Committee has been working with the Bureau of Emergency Management for the State of New Hampshire to finalize the memorandum of agreement, that has been in limbo for a number years, so we will be ready for the next emergency.

**FHWA Covered Bridge Manual**

The FHWA Covered Bridge Manual, for those that ordered earlier this year, will be available at the November meeting. There are also a few extra manuals that will also be available on a first come first serve basis.

As always, if you have any questions regarding SENH, what's planned for the future, or suggestions on how to improve our organization, please don't hesitate to contact any member of the Board of Directors.

Sincerely,  
Structural Engineers of New Hampshire

Steve W. Johnson, P.E.  
President



## Structural Engineers of New Hampshire Meeting Attendance

**DATE:** September 14, 2005

**PLACE:** A Fireside Inn, West Lebanon, NH

**RE:** Traditionally Connected Heavy Timber Connections New and Old  
(2.0 PDH Assigned)

NAME	ORGANIZATION	NAME	ORGANIZATION
Alex Azodi, P.E.	Omega Structural Eengineers	Thomas T. Kendrick, P.E.	Parsons Transportation Group
Darren Blood	Parsons Transportation Group	Matthew J. LaBrecque, P.E.	PCI Architecture
George Boque	Dufrense Henry	John Lens	GeoDesign
Roland J. Boucher, P.E.	Boucher Engineering Consultant	Jean Locizero	Engineering Ventures
Ben Brungraber, PhD., P.E.	Benson Woodworking Co., Inc.	Nathan Maher, P.E.	JSN Associates, Inc.
Robert S. Busby, P.E.	Kalwall Corporation	Kenneth G. Marshall, P.E.	Foley & Buhl Engineering, Inc.
Robert R. Bussiere, P.E.	Bussiere Engineering	Joe Miller	Yankee Barn Homes
Mike Chenette	Dufrense Henry	Raymond G. Morin, P.E.	Raymond G. Morin, P.E.
Normand G. Cote, Jr., P.E.	NGC Structural, LLC	D. Scott Osgood, P.E.	North Branch Construction Inc
Tony Coviello, P.E.	JSN Associates, Inc.	Nathan Phillips	DeWolfe Engineering
Christopher R.M. Daigle	Louis Berger Group	Stephen Richard	Steffensen Engineering Assoc.,
Paul R. Duquette, P.E.	Dufresne-Henry	Richard A. Rouleau, P.E.	Consultant
Paul R. Duquette, P.E.	Dufresne-Henry	Timothy L. Schaal, P.E.	Schaal Engineering, P.C.
Robert H. Durfee, P.E.	Hoyle, Tanner & Assoc., Inc.	Peter Steffensen, P.E.	Steffensen Engineering Assoc.,
Barb Evans	Dubois & King	Bruce D. Stewart, P.E.	Stewart Structural Engineering
Kirstin Fellows	DeWolfe Engineering	John G. Stockton, P.E.	Louis Berger Group
Jason Gaudette	GeoDesign	Gary R. Sweeny	SEAVT
Roger W. Gayer, P.E.	Structures Unlimited, Inc.	Benjamin E. Tirey, P.E.	Str. Eng Consultant
Paul Goldberg, P.E.	PCI Architecture	Jeffrey S. Trexler, P.E.	Trexler Engineering
Timothy L. Grant, P.E.	TL Grant Engineering Consulting	John Treybal	Engineering Ventures
Steven M. Hodgdon, P.E.	Vanasse Hangen Brustlin, Inc.	Jared Waite	Dubois & King
Aaron Humphrey	GeoDesign	Edward Weingartner, P.E.	McFarland-Johnson, Inc.
Sean James, P.E.	Hoyle, Tanner & Assoc., Inc.	Jake Wilmett	GeoDesign
Mark Johnson	Engineering Ventures	Katy Wood	GeoDesign
Steve W. Johnson, P.E.	Vanasse Hangen Brustlin, Inc.	Peter Zelonis	Vermont Timber Works, Inc.
James Karmozyn, P.E.	H.E. Bergeron Engineering	Kim Zienkiewicz	Vanasse Hangen Brustlin, Inc.

## SENH September 14th Meeting Minutes

### I. BUSINESS PORTION OF MEETING:

The meeting was called to order by President Steve W. Johnson, PE, at 7:15 pm, after the social time and dinner.

1. Continuing Education: The SENH website now lists some of the continuing educational courses available in the New England Region. Some upcoming events in October include:
  - The New England Society of Professional Engineers regional conference in Portsmouth, NH,
  - ASCE seminars on the Design Strength of Shallow Foundation
  - ASCE seminar on the Structural Condition Assessment of Existing Structures
  - SENH seminar on Cold Formed Steel Framing
  - AISC Steel Design After CollegeIn November there is the AISC Breakfast Meeting on the AISC 2005 Specification
2. New Associate Members Approved: William Pascoli, AISC Marketing was granted an Associate Membership.
3. Request for Teachers: ASCE is looking for volunteers to teach the structural engineering portion of the PE refresher course. The curriculum involves a couple of hours in the evening for a few days.
4. Special Inspection Committee: Over 120 flyers have been mailed out to building inspectors throughout the state. A joint presentation with the New Hampshire Local Government Center to the building officials is planned for in November.
5. Treasurers Report: SENH has \$12,740.07 in the bank. The NCSEA membership dues of \$2,052 have not been paid which will reduce the bank balance. There are also some other miscellaneous bills due such as the \$20 for the mailing of the Special Inspection pamphlets.
6. Public Relations Committee: SENH has obtained a few volunteers for this new committee. A few more volunteers would be appreciated.
7. Katrina Disaster: NCSEA is compiling a list of volunteers for building assessment in the hurricane affected areas. From SENH eleven people have volunteered to perform the damage evaluation. No reimbursement of expense to the volunteers is expected at this time. To defray the cost of this endeavor, SENH is considering a pledge campaign if the volunteers are called. However, the chance of the volunteers being called is small. Nationally there are 20 to 30 organizations with over 340 specially trained members available.
8. NCSEA Conference: The 13<sup>th</sup> Annual National Conference will be held in Kansas City, October 27-29.
9. Covered Bridge Manual: For those who ordered the Covered Bridge Manual, but did not pick them up, Steve Johnson regrets that he forgot to bring the manuals. They are available at VHB.
10. Steve introduced the next speaker: Dr. Ben Brungraber, PhD, PE, of Bensonwood Homes.

### II. TECHNICAL PRESENTATION

Dr. Ben Brungraber, PhD, P.E., Bensonwood Homes, Walpole, NH, presented a brief discussion of traditionally heavy timber connections illustrated by several of his favorite projects. The scope of the projects incorporated a variety of structures from bridges, barns, lodges, conference centers, museums, corporate headquarters, down to individual rooms in private homes. One innovative design included the addition of sacrificial wood bearing pads under the wood bridges to delay the decay of the supporting wood frame. If rot was detected in a timely manner, the bridge could be raised by cranes, the pads replaced thus saving time and money to the repair the bridge. Another innovation was the design of an "open build" floor system. A sub floor was raised above the timber joist using metal jacks creating a nearly unobstructed space available to wiring, HVAC ducts, and plumbing. Paneling is laid on top of the heavy timber to hide the utilities but still exposes the attractive wood beams. Dr. Brungraber advocated intelligently designed joinery. He favored many small connectors over large bolt connections when fastening wood members together. The high stiffness of large steel bolts compared to wood often resulted in improper distribution of loads to the connection. One bolt of a group of heavy connections often would take too much of the load and crack the wood. He recommended not using bolts larger than 1" in diameter. He felt wood pegs often worked better than bolts. Pegs can fail in more ways than steel, but at least the designer can depend on obtaining the design shear value of the connection. Although no joint works purely as pinned or fixed, most timber connections can be considered pinned. His primary choice of wood for many of his projects is Douglas Fir. Its weight to strength ratio is exceptionally good. It has a dependable strength equal to most oak and also exhibits tremendous stiffness.

A listing of some of the timber frame projects presented during the meeting plus other additional detail can be found at [www.bensonwood.com](http://www.bensonwood.com)

#### **2.0 PDHs for the technical presentation were earned by attendees.**

Respectfully submitted by Robert S. Busby, P.E., acting on behalf of Linda McNair-Perry, Secretary, SENH

**NOVEMBER MEETING ANNOUNCEMENT**

- NEXT MEETING: Thursday November 17, 2005
- SUBJECT: **“Site Class Determination and Structural Considerations for Seismic Design Using IBC”**, Domenic Kelly, P.E.
- PLACE: **Red Hook Brewery**, Pease Tradeport, Portsmouth, NH.  
www.Redhook.com phone: (603) 430-8600
- DIRECTIONS: From the south or west:
- Take Route 101 to Interstate 95 North to Exit 4 (Routes 4, 16 and the Spaulding Tpke White Mtns and Lakes Region) which is a left hand exit.
  - Take Exit 1 (Pease International Tradeport/Gosling Road.).
  - At the bottom of the off-ramp, take a left.
  - At the second light, take a left onto International Drive.
  - At the stop sign, take a left onto Corporate Drive.
  - Redhook is the second driveway on the left.
- From the north:
- Route 16 to Exit 1, Gosling Road. Follow directions above to the Tradeport.
- AGENDA: 5:30 pm-6:30 pm Social Hour  
6:30 pm-7:15 pm Dinner  
7:15 pm-7:30 pm Business Meeting  
7:30 pm-8:50 pm Presentation
- DINNER: Buffet; Haddock and Southwestern Chicken.
- COST: Member: \$35.00 Non-Member: \$45.00 Full Time Student: \$30.00
- RSVP: by Thursday, November 10, 2005
- Please send check payable to “Structural Engineers of New Hampshire” with list of attendees to:
- SENH  
P.O. Box 226  
Manchester, NH 03105-0226  
Contact: Deb Coon, Administrative Assistant, (603) 669-5555
- NOTE: 2.0 PDHs have been assigned for attendance to this program. Attendees are responsible for ensuring they check-in on the attendance list upon arrival at the meeting.



**STRUCTURAL ENGINEERS  
OF NEW HAMPSHIRE**

P.O. Box 226  
Manchester, NH 03105-0226

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WE'RE ON THE WEB!  
[WWW.SENH.ORG](http://WWW.SENH.ORG)

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