



President's Letter

Good day and welcome to a new season of activity for SENH. My name is Tony Coviello, and I have been elected to serve as President for SENH this coming year. Our board had a meeting this past June and elected the following officers.

President
Tony Coviello, P.E., S.E.

Vice-President
Ed Bergeron, P.E.

Treasurer
Kyle Roy, P.E.

Secretary
Sean James, P.E.

Member at Large
Norm Cote, P.E.

I want to thank my fellow board members and past board members for their time and commitment to this organization. We have a busy year ahead of us and I know that we are ready to work.

I am sure most businesses in our organization are feeling the results of the economic downturn. Hopefully, you are seeing the positive side of less work in that now is a good time to earn those continuing education units (CEUs) or improve your marketing materials. SENH is making a commitment to be there with you. First, we are going to

try and keep meeting costs as low as possible. Partnering with meeting sponsors and member societies will help on this front. Second, we hope to offer some good programs this fall. The Professional Development Committee (PDC) with its new Chair, Josh Lund, P.E., have been hard at work already. Third, we hope to improve the organization through the start of some new programs and improving existing ones. Lastly, we hope to have the website updated this year to make it more user-friendly and a better resource for our members.

I hope that our members continue to see the value that SENH provides. Right now the Board has very important issues that we are trying to grapple with. The October 2010 PE exam will be last time the SE-I and SE-II exams are offered around the country. Beginning in April 2011, a new 2-day, 16-hour exam will replace them both. With this new exam, every state will have common examination requirements. Though, a couple states will still require you to get your Civil Engineering Licensure first (see California).

A big question remains about what happens to the rest of us – the “grand-

fathered”. Will there be grand-fathering? I am left to assume that it will be different in every state. States that currently require the SE-II license will probably require applicants through reciprocity to go back and take the new 2-day exam. There's still time to take the SE-II exam and you don't have to travel to a west coast state to take it. Most PE Boards (not New Hampshire) will allow proctoring of the exam. I took mine in Maine for example. The SENH Board will continue to track this issue and report back to our membership when news becomes available.

The new exam creates another potential problem in states without a Practice Act. As I am sure you are aware, New Hampshire does not have a Practice Act. Our stamps do not distinguish between Structural and Electrical Engineers, for example. If you feel you are competent to practice in another field, then you are able to do so in this and many other states. While this is a concern to me, not all engineering organizations agree that it is a problem. A separate but related issue comes to the front when a state without a Practice Act starts implementing the new exam.

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Special Points of Interest/ Reminders:

- The next SENH Meeting is September 22, 2009. See inside for details.
- There is a **NEW** address for mailing meeting/seminar RSVPs and payments—Please see Page 2

President's Letter

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Structural Engineers go to school studying Civil Engineering. Thus, our skill sets can overlap with our Land Development brethren. The problem lies when an EIT goes to choose which exam to take to obtain their professional licensure. One could imagine a Structural EIT choosing to take the Civil Engineering PE Exam because, it's cheaper, it's shorter, it has a higher pass rate, it's on a subject matter you have some familiarity with, and the State won't distinguish between the two once you pass.

I believe this is a concern and we need to meet with the State Board of Licensure to resolve this issue before the start of the exam change. Again, we will keep you updated on any developments.

We have this and other issues that I will outline in future newsletters to deal with in the coming year. Thank you again for allowing me to serve as your President. I look forward to seeing you all at our dinner meetings this fall and coming spring.

-Tony Coviello, P.E., S.E.
SENH President

Federal and State Update, *Submitted by H. Edmond Bergeron, P.E.*

ARRA funded projects are moving forward much slower than anticipated for a variety of reasons. These are mostly to do with additional work added to NHDOT's plate, new environmental review requirements, new plan review requirements, and other reviews required by Federal Highway before projects can be advertised for bids.

New Mailing Address for Meeting/Conference RSVPs

Effective immediately there is a new mailing address for anyone rsvp'ing and mailing payments for meetings/conferences. The new mailing address is Hoyle, Tanner & Associates, Inc., Attn. Deb Coon, 150 Dow Street, Manchester, NH 03101. All other business should continue to be mailed to the P.O. Box as usual.

2009-2010 SENH Meeting Dates Set

The SENH Board of Directors has approved the dates listed below for our next five meetings. Also included is the expected meeting location and general topic. Details of each meeting will be provided in upcoming newsletters and you will be notified of any changes.

We would also like to bring to your attention that these dates as well as key dates for other NH Engineering Societies and related events are posted on the NH Engineering Calendar. The calendar can be accessed at: <http://www.nhecal.org/>.

<u>Meeting Date</u>	<u>Expected Location</u>	<u>Topic</u>
November 17, 2009	Portsmouth	Business Practice – Joint Meeting with NHSPE
January 14, 2010	Concord	Bridge
March 9, 2010	UNH	TBD

New Members, Associate Members & Student Members

SENH is proud to welcome the following new Members, Associate Members & Student Members:

Associate Members:

- ◇ Tim Foy, FMC Technologies

SENH SEPTEMBER MEETING ANNOUNCEMENT

- NEXT MEETING:** **Joint SENH/ASCE Meeting**
Tuesday, September 22, 2009
- PRESENTATION:** Brian Barry, Technical Sales Engineer for Dragon Products Company, will discuss concrete mix design, chemical admixtures, and mineral admixtures. The core of the performance of ready-mix concrete is the effective application of proportioning principles. The intent of this presentation is to review some of the fundamentals of concrete mix design and the role of chemical and mineral admixtures. The pros and cons of chemical and mineral admixtures will be discussed along with their application, incorporation into the mix and things to watch out for during construction and mix design review.
- PLACE:** The Derryfield Restaurant
625 Mammoth Road
Manchester, NH 03104
(603) 623-2880
- DIRECTIONS:** I-93 to Exit 8, West on Bridge Street, Left onto Mammoth Road at second traffic light. Restaurant is at the Derryfield municipal golf course, ¼ mile, on left.
- AGENDA:** 5:00 pm-6:15 pm Social Hour
6:15 pm-7:00 pm Dinner
7:00 pm-7:30 pm Business Meeting
7:30 pm-9:00 pm Presentations
- DINNER:** Buffet with choice of Grilled Beef, Chicken Parmesan, and Wild Mushroom Ravioli
- COST:** Member: \$45.00 Non-Member: \$45.00 Full Time Student: \$10.00
- RSVP:** by Wednesday, September 16, 2009. There will be a \$5.00 late fee for anyone wishing to RSVP past the Wednesday, September 16, 2009 date.

Please send check payable to "Structural Engineers of New Hampshire" with list of attendees to:

PLEASE NOTE NEW ADDRESS

Hoyle, Tanner & Associates, Inc.
Attn. Deb Coon
150 Dow Street
Manchester, NH 03101
Contact: Deb Coon, Administrative Assistant
dcoon@hoyletanner.com

- NOTE:** 2.0 PDHs have been assigned for attendance to this program. Attendees are responsible for ensuring their check-in on the attendance list upon arrival at the meeting.

SENH May 19, 2009 Meeting Minutes

Business Portion of the Meeting

I. BUSINESS PORTION OF MEETING:

The meeting was called to order by Alex Azodi, P.E., President, of SENH at 7:30 pm. He expressed his appreciation to the membership for the opportunity to serve on the board. He also thanked the two other board members, Steve Johnson and Bob Busby, who were leaving the board, for their services. The organization has over 150 members and has been very successful in serving the structural engineering community. He encouraged all present to continuing helping the organization.

1. Election to the Board: The nominees, Ed Bergeron, Norman Cote and Sean James were unanimously elected to the board.
2. Treasurers Report: Kyle Roy reported the financial strength of the organization was good. The checkbook balance for this month was \$25,124.17.
3. New Member: Tim Foy was accepted as a new associate member.
4. Professional Development Committee: Sean James provided a brief summary of the PDC activity. The UNH meeting was a unique and successful program. Tonight's meeting was being sponsored by Autodesk which help reduced the cost of tonight's dinner. Since Sean is joining the board, he recommended Josh Lund to replace him as Chairman of the PDC.
5. NE Coalition of Structural Engineers: Tony Coviello talks with the liaisons once a month. Tony had learned that a NCSEA planned seminar in New York was cancelled and that SEA was searching for a new venue. He persuaded NCSEA to hold the meeting in Manchester. The half day seminar is scheduled for June 24. The topic will be "Guide to the Design of Diaphragms, Chords and Collectors Based on the 2006 IBC and ASCE/SEI 7-05".
6. SENH Policy: SENH has established informal guidelines to accomplishing certain goals and tasks. These guidelines or policies will soon be posted on the website for the membership to review and change.
7. AISC Steel Conference: In Phoenix last month, AISC held the North America Steel Conference. One topic was steel connection which raised a never ending issue; who is responsible for the design of the connection, the fabricator's engineer or the engineer of record? Emile Troup queried the membership on who designed their own connection and who delegated the design to a fabricator. It was noted that the SER had to review the connection layout and shared the design responsibility with the fabricator. The fabricator may opt to use AISC predesigned connection which should limit the liability to the SER. The discussion expanded into other specialty areas. The designs of miscellaneous metal such as stair, risers, handrails, skylights, etc are often performed by the manufacturer's engineer. Some SER are limiting their scope of responsibility to only how these items connect to and affect the building design.
8. NCSEA: Bob Durfee announced NCSEA is having its annual meeting in Scottsdale, AZ on October 15-17. The two day conference offers 16 PDH to those who are interested in attending. Each year NCSEA presents awards in five design categories. Project nominations are due July 17. The award program is a good opportunity to show off the great work done in NH. Information regarding the program can be obtained at the NCSEA website.
9. Outstanding Service Award: Alex announced that SENH is only as successful as to the amount of participation of its members, specifically the volunteers. Sometimes there are a few who go beyond the call of duty. Tonight, SENH recognized two outstanding members, Linda McNair Perry and Robert Durfee for their contribution to the organization. On behalf of SENH Alex presented the two members the SENH Outstanding Service Award.
10. Sean James introduced tonight's speaker.

Building Information Modeling (BIM), by *Scott Hammond, Marketing Manager for Structural Engineering at Autodesk*.

II. TECHNICAL PRESENTATION:

Scott Hammond, a graduate of Worcester Polytechnic Institute, had worked as a structural engineer for over six years before coming to Autodesk four years ago. At that time Revit was new to him. Tonight's meeting purpose is to discuss how the technology is leveraged in the structural engineering office for both buildings and bridges.

"A Nation of Villages", New York Times columnist David Brooks writes, 01/15/06, "Between now and 2025, the population of the US will increase by 70 million. That's the populations of California, New York and Florida put together. To accommodate these new people, 100 billion square feet of new residential space will have to be constructed." According to a Brookings In-

BIM is an integrated workflow that allows architects, engineers, and builders to explore a project digitally before it is built. It provides coordinated, consistent information that is used throughout the process. It allows us to design innovative projects, accurately visualize physical appearance and to simulate real-world performance. Architects alone account for 40% of the primary drivers for BIM use on projects, followed by Contract Managers or GC accounting for 18%, Combination of both 14%, Owners 13%, CE 7%, MEP 3%, SE 2%, and Trade Contractors 1%.

BIM is not just 3D drawings. It is not just data nor is it only 3D drawings and data. It is computable building information modeling that facilitates workflow. When dealing with Building Information Modeling there are three spectrums of use, Basic BIM, Integrated BIM, and Integrated Project Delivery. Basic BIM is the use of technology for an individual piece of the building project. It is used for part of the design or construction process. Integrated BIM is combining multi-disciplinary models, having multi-disciplinary setting. The benefit is improved coordination, quality, and efficiency of design or documentation. Integrated Project Delivery is a contractual approach that combines the design and construction team. BIM is the key aspect of design and construction. It is one team implementing the full design and construction.

Basic BIM uses the technology for improved documentation. It usually involves development of 3D model for construction documents, internal coordination and some 3D visualization. The process produces replicas of 2D construction drawings. Regarding productivity, the development of an initial model requires more time up front. The plans which are created are not just lines and text. They are structural elements which include dynamic annotations. The initial time spent up front is offset by less RFI and project changes later on. Time to develop sections and elevations is also reduced later on because of the enhanced clarity and collaboration up front. The method gives a "Forced" understanding of the project. The 3D model provides unlimited details. Even the details are "detailed." The method also requires knowing some non-3D information (quantities, sizes, etc.). Basic BIM improves 3D and 2D workflow to maximize productivity. A change to a detail on one drawing changes all drawings depending on that detail.

The cost of "Inadequate Interoperability" due to poor coordination in AEC Industry in the US alone is \$15.6 billion per year. The estimated manual data re-entry cost for designers is \$462 million. The estimated RFI management cost (combined contractors and architect/engineer) is \$500 million. BIM provides proper internal coordination for engineers and drafters; the visual coordination with Architects, MEP Engineers, and integrates the different team models for interference checking.

Two BIM case studies were provided. The construction was completed with minimal RFI and no change orders. In addition to coordination, BIM allows analysis and simulation early in the development phase of the project. It expands the structural engineer role as decision maker and influencer early reducing the number of changes and redesign that occurs later on.

Concerning opportunities and moving forward, the AIA wrote a BIM document, E202-2008, specifically to foster the adoption of BIM within the design-build industry. The document seeks to create an environment that encourages model authors to share their models with downstream users. It is not a stand-alone document but a protocol agreement that must be attached as an exhibit for design, construction or services. The content gives five progressively detailed levels specifying who is responsible for authoring each element of the model at each project phase. It defines the extent to which downstream model users, can use and rely on the model for scheduling, pricing, fabricating and construction. It also clarifies who owns the model and who has the right to use it.

The National Institute of Building Sciences, concerned about the lack of standards regarding BIM implementation, established the NBIMS –National Building Information Modeling Standard. Version –Part 1 "Overview, Principles, and Methodologies" is now available.

As with any new process or program there are liability issues. AIA Contract C106-2007 serves as a "Digital Data Licensing Agreement" between parties who otherwise has no licensing agreement. It allows a defined use of the data model, for which the originator may collect a fee. It states who can store and view, reproduce and distribute, integrate (without modifying original), modify as required the AIA Exhibits.

Along with the E202-2008 Building Information Modeling Protocol, AIA E201-2007 "Digital Data Protocol" defining the authorized use of data is also attached as an exhibit to the BIM project.

The benefits to structural engineers in implementing building design also apply to bridge engineers performing bridge design. It provides 3D representation of typical 2D workflow allowing improved collaboration with the site from the civil engineering firm. There will be no misunderstanding regarding pier placement and other foundation modifications.

2.0 PDHs for the technical presentation were earned by attendees. Respectfully submitted by Robert S. Busby, P.E., Secretary, SENH

Attendance List

Building Information Modeling (BIM)

The Puritan Backroom

(2.0 PDHs)

May 19, 2009

Name	Organization	Name	Organization
Alex Azodi, P.E., SECB	Omega Structural Engineers	Sean James, P.E., SECB	Hoyle, Tanner & Assoc., Inc.
H. Edmond Bergeron, P.E., SECB	HE Bergeron Engineers	Heather Jones	University of New Hampshire
Robert Blair	Waldron Engineering & Construction, Inc.	Jeffery R. Karam, P.E.	Summit Engineering, PLLC
Jay H. Brown, P.E.	Structural Systems, Inc.	Roger Keilig, P.E.	HTE Northeast, Inc.
Tim Bryant	Vanasse Hangen Brustlin, Inc.	Paul Kirby, P.E.	The Louis Berger Group, Inc.
Robert S. Busby, P.E.	Kalwall Corporation	Stephen Kiss, P.E.	SAK Engineering
Robert Champagne, P.E., SECB	Summit Engineering, PLLC	Aaron M. LaChance, P.E.	Stantec Consulting
Lou Cote	Steffensen Engineering Assoc., Inc.	Thomas E. Lamb	TFMoran, Inc.
Normand G. Cote, P.E., SECB	NGC Structural, LLC	Laurent Levesque, P.E.	J.G.E. Enterprises
Tony Coviello, P.E.	Summit Engineering, PLLC	Jonathan M. Longchamp, P.E., SECB	Daigle Engineers, Inc.
Edward F. Decelle	Structural Systems, Inc.	Josh Lund, P.E.	Stantec
Robert H. Durfee, P.E., SECB	Dubois & King, Inc.	Kenneth G. Marshall, P.E.	Foley Buhl Roberts & Associates, Inc.
Joel Fisher, P.E.	Fisher Engineering, P.C.	Donald F. Mayo, P.E.	Donald F. Mayo, P.E.
Tim Foy	FMC Technologies	Laurence J. Obrien, P.E.	Gelinas Structural Engineering, LLC
Roger W. Gayer, P.E.	Structures Unlimited, Inc.	Stephen Richard	Steffensen Engineering Assoc., Inc.
Dan L. Gelinas, P.E., SECB	Gelinas Structural Engineering, LLC	Richard E. Roberts, P.E.	Foley Buhl Roberts & Associates, Inc.
Derek J. Gilbert, P.E.	Microdesk	Arthur W. Rose, P.E.	Arthur W. Rose, P.E., PLLC
Greg Goodrich	Vanasse Hangen Brustlin, Inc.	Kyle Roy, P.E.	TFMoran, Inc.
Scott Hammond	AutoDesk	Paul Sbacchi, P.E.	TFMoran, Inc.
Kayla Hampe	University of New Hampshire	Timothy L. Schaal, P.E.	Schaal Engineering, P.C.
Marcus Hann, P.E.	Waldron Engineering & Construction, Inc.	Jeffrey L. Tirey, P.E., SECB	Tirey & Associates, P.C.
Robert S. Hartford, P.E.	Kalwall Corporation	Emile Troup	
Steven M. Hodgdon, P.E.	Vanasse Hangen Brustlin, Inc.		

Additional Meetings & Conferences

Working with the Joint Engineering Societies Committee, NHSPE has developed a "NH Engineering Calendar" (www.nhecal.org) where all societies can post events. The intent is to have a single site where upcoming events for all societies are listed. If you would like to post an event, please email the details to info@nhspe.org.

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**P.O. BOX 226
MANCHESTER, NH 03105-0226**

WWW.SENH.ORG



Member of

Board of Directors

President	Tony Coviello, P.E.
Vice President	H. Edmond Bergeron, P.E., SECB
Secretary	Sean James, P.E., SECB
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Director at Large	Normand Cote, P.E., SECB