



Granite Columns



President's Letter



Happy Engineers Week!

This is the one week each year dedicated to the mighty engineer. We come in all shapes and sizes, but I happen to think structural is the best. The reality is, it is the one week of the year, during which, we can educate the public about our role in society.

Part of that public is our students. I'll encourage all of our members to demonstrate the best of structural engineering in whatever way you can. Our next meeting, at UNH, provides UNH students with a direct connection to SENH. Again, our YMG will be providing resume review session for UNH students and could likely use some help to provide advice demonstrating who they are on an 8 ½ by 11 inch space. In addition, I hope we can each seek out a chance to get involved in STEM events with our middle and high school students. One such opportunity will be at the NH Science and Engineering Expo (NHSEE) on March 15th. The organizers are seeking additional engineers to serve as judges, as they are a bit short, more details will be provided.

An update on our strategic planning efforts. The Board is continuing to work through an outline of strategies and action items associated with the overall vision of SENH:

SENH is a professional association of structural engineers practicing in New Hampshire that is founded on the premise that those in the structural engineering community can improve and advance the practice of structural engineering for both the individual and the profession.

It's a simple vision, and the Board will work hard to finish developing a concise plan with current demands and a look to the short-term future. Our goal is to present the plan at the Annual Meeting in April.

On a similar note, I'm proud to say that we have recently added nine new members in 2018! I will be calling each one this week to welcome them to SENH and understand how we can best serve them. Beyond this, we are still looking for renewals from 18 existing members, it's not too late!

I hope to see you all at the 67th Annual Engineers Week Awards Banquet on Thursday. Feel free to catch me there or wherever you can and discuss an ideas you have for SENH's future. If you want to chime in, at anytime, regarding the strengths or weaknesses of SENH, or to see where you may be able to contribute as part of our upcoming strategic plan, please do not hesitate to call me at 356-6936 or shoot me an e-mail.

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Special Points of Interest/ Reminders:

- *Mark your calendars! The next meeting is March 21st—See inside for details.*
- *The Annual Excellence In Structural Engineering Award submission due date is quickly approaching! Get your entries in by March 1st!*
- *It's not too late to renew your SENH membership, or become a Corporate Sponsor!! Forms can be emailed to Cassi at Admin@SENH.org*

SENH Committee Updates

- The Younger Members Group will host an upcoming panel discussion with senior members of SENH, the YMG, and UNH students. The goal for this panel discussion is to provide a venue for younger engineers and students to gain insight into our profession, through dialogue with more seasoned engineers. The panel discussion will be open ended with possible topics to include; determining which discipline of structural engineering to pursue, advice on landing that first job, what to expect when starting your career, etc. The panel discussion will be held at UNH, with a specific date and time to follow in an announcement. Currently we are looking for participants to join the panel. If interested, please send an email to senhymg@gmail.com. We look forward to seeing you there!
- The Younger Members Group will also hold a resume review with UNH students before the March meeting. Our intention is to benefit students applying for internships, or transitioning into the profession by giving them a chance to interact with practicing structural engineers. We hope to have another strong turnout from UNH students!

Final Call for Excellence in Structural Engineering Award Entries!!

Excellence in Structural Engineering Awards Committee Submitted by Robert Durfee, P.E., SECB

*Project Entries for the second annual Excellence in Structural Engineering Awards awards program is due by **March 1, 2018 (just two weeks away)**.*

Don't panic! There is plenty of time to assemble your Project Entry. The entry requirements are short and easy:

- Fill out the one page entry form
- Prepare an 800 word (or less) project description
- Assemble 4 to 8 color photos (8" x 10")
- Include 1 to 2 sketches or plan sheets (11" x 17")
- Send check for \$50 entry fee

It is that simple!! Visit the SENH website for eligibility requirements and complete details to submit a project: <http://www.senh.org/excellence>

New for this year, your project may be eligible for a *Small Firm Project Award*!! See details on the SENH website

We hope to see your project submission on or before **March 1st!!!!**

SENH March Meeting Announcement

NEXT MEETING: Wednesday, March 21, 2018

PLACE: University of New Hampshire
Kingsbury Hall Room N101 (Large Lecture Hall right next to Albert's Café)
McDaniel Drive
Durham, NH 03824
(603) 862-1428

DIRECTIONS: From the West: Take Rt. 101 to Rt. 125 North. At the Lee traffic circle, take Rt. 4 East to Exit for 155A (Main St.) Go right to 155A (Main St.), pass UNH Field House, take next right onto College Rd. Veer left onto College Rd. Kingsbury Hall is the second large building on the left after passing the fire station.
From the East: Take Rt. 16 North to Rt. 4 East towards Durham. Exit Rt. 4 onto Main Street and follow directions from above.

PARKING: Park in the visitor section of Lot H (before 6:00 pm it's "pay and display" parking by the hour, and then after 6:00 pm this lot is free). Lot A and Lot B are free after 6:00 pm, or use "pay and display" spots around campus. Please be careful to read all parking lot signs and hours before parking, and see the attached parking map.

AGENDA: 5:30 pm – 6:30 pm Registration/Social Hour/Dinner
6:30 pm – 6:45 pm Business Meeting
6:45 pm – 8:45 pm Presentations (See Next Page)

DINNER: Pizza, Assorted Sodas and Water.

COST: Member: \$20.00 - Non-Member: \$25.00
Student: FREE
"No-shows" will be billed at full amount.

RSVP: By Wednesday, March 14, 2018. There will be a \$5.00 late fee for anyone wishing to RSVP past this date.

Pay on line using PayPal at <http://www.senh.org/meeting-calendar> or send check payable to "Structural Engineers of New Hampshire" with list of attendees to:

TFMoran, Inc.
Attn. Cassi Beroney
48 Constitution Drive
Bedford, NH 03110
cberoney@tfmoran.com

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

SENH January Meeting Announcement

Continued from page 3

PRESENTATIONS:

6:45 pm-7:15 pm

UNH's Chapter of Engineer's Without Borders (EWB) will be updating us on their recent projects and travel to Uganda.

The Tower Crane Collapse Investigation Senior Capstone Group will be presenting on their project progress.

7:15 pm-7:45 pm

RiverWalk Resort at Loon Mountain

By Linda McNair-Perry, PE, SECB

Ms. **Linda McNair-Perry** is an Associate with Hoyle, Tanner & Associates, Inc. where she is Manager of the Building Structures Services Group. She earned her BS in Civil Engineering from Carnegie-Mellon University and is a licensed Professional Engineer in eight states with over 37 years of experience. Linda served for six years on the NH Building Code Review Board. She has a comprehensive background in the design and analysis of buildings and other structures for new construction and renovation projects.

Description: The RiverWalk Resort at Loon Mountain project site was the former Franconia Paper Mill on the banks of the Middle Branch Pemigewasset River in Lincoln, NH. The fractional ownership-style resort was conceived as a three phase project that will total approximately 300,000 sq. ft. when complete. The structural design accommodated the tight limits placed on the height of the occupied floors within the building. There are two cupolas that extend above the three-story tall roof for a total height of nearly 140' above grade.

Hoyle, Tanner's Building Services Structural Group began engagement in the fast-track Phase I of the project in the spring of 2014 and worked with Berard Martel Architecture, GZA GeoEnvironmental and Yeaton Associates on the construction documents for the building. Daniel Hebert Inc., general contractor, broke ground for the foundation of the 7-story steel-framed building in the fall that same year and received its certificate of occupancy in June 2016.

7:45 pm-8:15 pm

Overview of New Hampshire's Covered Bridges & Design Requirements

By Robert H. Durfee, PE, SECB

Mr. **Robert H. Durfee** is Vice-President and Chief Bridge Engineer for Dubois & King, Inc. in Laconia, NH. Mr. Durfee is a licensed Professional Engineer in eight states with over 38 years of experience in the design and construction of transportation projects (Bridges & Highways). He has focused his career on the repair or rehabilitative design of Historic Covered Bridges which includes over 25 covered bridge rehabilitation projects in New Hampshire, Vermont, Massachusetts and Pennsylvania. He has also managed the design and construction of two new covered bridges in New England. He has presented and published numerous papers on the rehabilitation of covered bridges and lectures on the subject throughout the USA.

SENH January Meeting Announcement

Continued from page 4

Description: An overview of New Hampshire's 56 Covered Bridges from oldest to newest and their construction types will be presented. Original construction techniques will be discussed. A review of the design/rehabilitative design requirements for Covered Bridges and Code Provisions for Covered Bridges will also be presented.

::15 pm-8:45 pm

Fully Integral 2 Span Curved Girder Bridge Replacement in 72 Days

By Adam Stockin, PE and Rebekah Gaudreau, PE

Mr. **Adam Stockin** is the Northern New England Structures Manager for WSP out of Manchester, NH. He earned his BS in Civil Engineering from Clarkson University and is a licensed engineer in New Hampshire, Vermont and Maine. His professional experience over the last 18 years includes the design of various steel and concrete bridge types including several Accelerated Bridge Construction and Design Build projects. He is currently serving as the Structural Task Manger for the I-93 widening project in NH, which includes work on 18 bridges. He is also a Past President for the Structural Engineers of NH structural association.

Ms. **Rebekah Gaudreau** is a graduate of the University of New Hampshire where she received a BS and MS in Civil Engineering. She maintains professional licensure in New Hampshire, Maine, and Vermont. Rebekah has 10 years of professional experience including the design, analysis, and inspection of numerous trusses and steel and concrete girder bridges throughout northern New England. Key projects include the inspection and rating of the Bourne and Sagamore bridges over the Cape Cod Canal and structural analysis of the I-95 Network Arch Bridges over the Merrimack River.

Description: This Accelerated Bridge Construction (ABC) project in New Haven, Vermont consisted of the replacement of a 170' three span bridge over the New Haven River. The replacement bridge is a 164' - 2 span curved steel girder superstructure with precast integral abutments on steel piles. The central pier consists of an integral pier cap connected to a single 6' diameter column utilizing an innovative grouted connection supported on an 8' diameter drilled shaft. This 2 span structure has no joints or bearings thereby decreasing future maintenance costs and increasing the service life of the structure.

The bridge was constrained by a limited hydraulic opening and a poor vertical roadway alignment which required an innovative design to limit impacts during periods of high flow. A traditional pier cap extending below the girders was not feasible due to the potential for debris collection. The accelerated nature of this project, together with these site constraints, required a unique design where the pier cap was prefabricated integrally with portions of the steel superstructure offsite.

The design of this structure required the construction of a 3D Hybrid Stiffness/Finite Element Model for analysis under gravity and lateral loading, including seismic considerations for zone 2 and flood loads. Utilizing ABC techniques, this complex bridge was successfully constructed within a 72 day road closure period.

January Attendance List & Meeting Minutes

Presentation #1—NHDOT Bridge Program Update

Presentation # 2—WYNN Casino, Everett, MA: A 3.6M sq. ft. Casino & 22-story Hotel Design Project (2.0 PDH's)
Grappone Conference Center, 70 Constitution Avenue, Concord, NH January 18, 2018

Name	Organization	Name	Organization
Aaron LaChance, P.E.	Hoyle Tanner & Associates Inc.	Kenneth Marshall, P.E.	Foley Buhl Roberts & Associates
Adam Stockin, P.E.	WSP USA	Kim Armstrong, P.E.	GPI Engineering
Alex Azodi, P.E.	Omega Structural Engineers	Kimberly Smith	Hardesty Hanover
Anna Giraldi, P.E.	CLD/ Fuss & O'Neill	Matt Low, P.E.	Hoyle Tanner & Associates Inc.
Bob Champagne, P.E.	Summit Engineering	Nevin Gomez, P.E.	WSP USA
Cameron Bellisle	Dubois & King	Paul Sbacchi, P.E.	TFMoran Inc.
Christopher Fournier, P.E.	HEB Engineers	Rebekah Gaudreau, P.E.	WSP USA
Dana Adams, P.E.	Corbell Development	Robert Busby, P.E.	KalWall
Ed Decelle	Structural Systems	Roger Gayer, P.E.	StructuresUnlimited, Inc.
Ed Weingartner, P.E.	Hoyle Tanner & Associates Inc.	Roger Kelig	NHDOT
Eric Ohanian, P.E.	Tighe & Bond	Sam White	McFarland Johnson
Ethan Carrier, E.I.T.	CLD/ Fuss & O'Neill	Sean Brown	Kleinfelder
Fred Emanuel, P.E.	Emanuel Engineering	Sean James, P.E.	Hoyle Tanner & Associates Inc.
Jaime French, P.E.	CLD/ Fuss & O'Neill	Stephen Langevin, P.E.	GPI Engineering
Joe Ripley, P.E.	Hoyle Tanner & Associates Inc.	Steve Hodgdon, P.E.	Hoyle Tanner & Associates Inc.
John Byatt, P.E.	CLD/ Fuss & O'Neill	Thomas, Levins, P.E.	GM2 Associates Inc.
Josh Lund, P.E.	McFarland Johnson	Timothy Grant, P.E., SECB	Northpoint Engineering, LLC
Josh Reilly, P.E.	Structural Systems	Timothy Polson, P.E.	WSP USA
Karie James, P.E.	WSP USA	Tom Kendrick, P.E.	McFarland Johnson
Katlyn Welch, E.I.T.	Hoyle Tanner & Associates Inc.	Tom Lamb, P.E.	TFMoran Inc.
Kayle Hampe, E.I.T.	Hoyle Tanner & Associates Inc.	Zachary Zavalianos	Dubois & King
Kelly Stevens	Hoyle Tanner & Associates Inc.		

Business Portion of the Meeting

Chris Fournier made a few announcements:

- Membership renewals are due January 1st
- One more presenter is needed for the March meeting

Adam Stockin announced the 2018 SENH Excellence in Structural Engineering Awards. Categories for this year are Buildings, Bridges, Special Structures, and Small Firm Projects.

January Attendance List & Meeting Minutes

NHDOT Bridge Program Update & Wynn Casino & Hotel Design Project
Continued from page 4

Presentations

Robert Landry, P.E. of NHDOT provided a Bridge Program Update. Mr. Landry emphasized more funding to repair and replace New Hampshire's bridges is needed. The number of bridges on the "yellow list" is growing. Several causes of this were explained, including more bridges coming into a condition to move them to the yellow list as well as more bridges staying on the list longer. Several bridge replacement and rehabilitation projects recently completed were presented. In addition to bridge rehabilitation projects, a Tidal Energy project was also presented. Upcoming bridge training courses were also announced.

Brent Shannon, P.E. of McNamara Salvia presented the Wynn Casino project in Everett, MA. The building project is comprised in 4 parts: a concrete framed hotel tower, the surround steel framed podium, the adjacent conference center and the central utility plant (CUP). The 3.1 million square foot project is the largest single phase development project in the Boston area. The project was produced on a fast track schedule.

Foundations consisted of slurry walls, a cast in place concrete mat, rock anchors and load bearing elements. Significant hydrostatic uplift forces were imposed on the building due to the ground water table. The weight of the building and the rock anchors were employed to resist this.

The convention center is comprised of structural steel framing. The convention center lateral load resisting system includes moment and brace frames. The frames were designed with an R value of 3 to save on connection costs. Trusses to frame the roof over the convention center were over 130 feet in span and were field spliced.

The podium structure is composite steel/concrete framed construction with steel moment and brace frames. The framing also included significant floor to floor heights and structural member spans. Plate girders and large girder trusses were used to accommodate this. The critical path item for construction of the project was determined to be the steel framing. This was due in part to significant façade items that needed to be supported.

The hotel tower structure was concrete framed. Post tensioned slabs framed the floors and a cast in place concrete core with steel link beams made up the lateral load resisting system. The wind tunnel procedure was used to determine the wind pressures on the tower.

Construction oversight on the project included an onsite engineer for 6 months and a 3-dimensional shop drawing review. This allowed for better coordination and construction efficiency.

Upcoming Events



2018 Civil and Environmental Engineering

Alumni Conference

April 5, 2018

The 5th UNH Civil and Environmental Engineering Alumni Conference is a forum for alumni of the Civil and Environmental Engineering Departments to return to UNH and share with students, faculty, and each other their experiences, including professional project work, research, and/or other notable career achievements since leaving UNH.

Thursday, April 5, 2018

University of New Hampshire Durham Campus

Keynote Presenter: Kathleen White, Civil Engineer

United States Army Corps of Engineers

Kate White, a registered professional engineer, leads the US Army Corps of Engineers (USACE) Climate Preparedness and Resilience Community of Practice and has over 28 years of experience in the USACE. Her work includes development of policy, technical guidance, methods, and tools to support climate preparedness and resilience. Her work reflects extensive interagency and expert collaboration in the areas of climate change that are related to USACE mission and operations, particularly the Civil Works program and water resources management. Topics include sea level change impacts and adaptation, hydrologic nonstationarity, changing reservoir sedimentation, and climate vulnerability analyses affecting coastal projects, watersheds, reservoirs, and supply chains. She is also responsible for implementation of climate preparedness and resilience in USACE projects, including agency technical review and oversight of policy and guidance.



She received a 2013 GreenGov Presidential Award: Climate Champion for her role in the interagency team that developed the Sea Level Rise Tool for Sandy Recovery. She was selected as the USACE 2014 Elvin R. "Vold" Heiberg III "Engineer of the Year" and as a 2015 Top Ten Federal Engineer of the Year by the National Society of Professional Engineers.

Dr. White holds BS and MS degrees in civil engineering and a PhD in civil and environmental engineering.

Register Online Today! <https://ceps.unh.edu/cealumniconference>



2018 UNH Civil & Environmental Engineering

Alumni Conference

Thursday, April 5, 2018

UNH Campus - MUB/Holloway Commons

For more information please visit <https://ceps.unh.edu/cealumniconference>

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Employment Opportunities

SENIOR BRIDGE ENGINEER/PROJECT MANAGER (Concord, NH)

Quantum Construction Consultants, LLC (QCC) is seeking a highly motivated, Senior Bridge Engineer/Project Manager to join our progressive team in Concord, NH.

Responsibilities will include project management, structural design calculations, bridge design reports, plans and specifications, and assist project team as required for quality assurance. Requirements include NH Professional Engineer License and 15+ years' experience in bridge design.

Please see our full classified advertisement at www.quantum-cc.com in the company section or forward qualifications to hnadeau@quantum-cc.com.



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