



Granite Columns



President's Letter



A number of great opportunities for learning and engagement happened over the past month. Two events were held via web meeting this year. The North East Coalition of Structural Engineering Association's (NECSEA) first annual summit and the NCSEA annual leadership summit. I was fortunate enough to catch a good portion of both of these and I hope many others were able to as well.

Many of our committee and board members were able to attend the NCSEA leadership conference this April. This was also at no cost to attendees. There was good information and a several resources highlighted from a member organization perspective. I look forward to reviewing these with others who attended and hopefully implementing some of the suggestions in the future. Some of this relates to our website, which has not been updated for quite some time. If anyone is interested in working on this,

please let me know.

Many SENH members also attended the first NECSEA summit a few weeks ago. The summit was over two mid-day learning related sessions and included an informative presentation on special structures as well as three code presentations on rain, snow and concrete. This relatively inexpensive event gave our members exposure to nationally recognized experts. Thankyou to all who attended. I look forward to future summits like this. Keep in mind the NCSEA national summit is this fall in New York, another great opportunity for great networking and learning!

Lastly, as the restrictions loosen on gatherings, I am hopeful to see many of our members after our summer break. As with anything, it is not for certain, however, it is likely enough to look forward to. Thank you to all our members for their patience and flexibility over the past meeting season. The SENH board and committees have worked hard to adapt to changing times. In many cases it was not an easy task but everyone's resilience has come through for us and this has not gone unnoticed. Thanks to all, I look forward to seeing you soon.

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Special Points of Interest/ Reminders:

- *Mark you calendars! The next meeting is scheduled for May 19th—See inside for details!*
- *Check out the nominees for the annual Excellence in Structural Engineering Awards!*

SENH May Meeting Announcement

NEXT MEETING: Wednesday, May 19, 2021

PRESENTATION: **Improving Structural Rooftop Unit Framing in Commercial Construction**

What you'll learn: The history of structural frames for roof top openings, as well as the modern solution (bolt-on, adjustable QuickFrames) and its various applications. The speaker will also cover common field challenges and examples of real projects that have benefited from the cost and time savings of this new approach.

SPEAKER: Gregory Kussmann is Partner & Director of Business Development at QuickFrames USA.



PLACE: **ONLINE**

A Zoom link will be sent on the day of the meeting to those who are registered.

Members: A calendar invite will be sent with a link to the meeting.

Non-Members and Students: Register following the RSVP instructions below.

AGENDA: 5:00 pm – 5:15 pm Business Meeting
5:15 pm – 5:30 pm Awards Program
5:30 pm – 6:30 pm Presentation

COST: Member: \$20
Non-Members: \$45
Students: **Free**

RSVP: By Monday, May 17, 2021

Pay online using PayPal at <http://www.senh.org/meeting-calendar> or send a 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

*Donations to the SENH scholarship fund are always welcome and appreciated.

NOTE: 1.0 PDH (NCSEA Diamond Reviewed) has been assigned for attendance. Attendees are responsible for signing into the Zoom meeting with first and last name in order to receive PDHs.

March Meeting Attendance List & Meeting Minutes

Various Presentations (2.0 PDH's)
Virtual Meeting Online via Zoom
March 29, 2021

<u>NAME</u>	<u>FIRM</u>	<u>NAME</u>	<u>FIRM</u>
Anna Giraldi	Quantum Construction Consultants, LLC	Kevin Carme	Fuss & O'Neill, Inc.
Bruce D. Stewart	Stewart Structural Engineering, PLLC	Michael Richard	Simpson Gumpertz & Heger
Chris Gagne		Paul Becht	The H.L. Turner Group, Inc.
Dan L Gelinas	Gelinas Structural Engineering, LLC	Paul Lefebvre	HDR Inc.
Dan Martel	Team Engineering	Rebecca Lubrano	Simpson Gumpertz & Heger
David Kull		Rich Rooney	
Eric Caron	WSP USA, Inc.	Richard J. Driscoll	Richard J. Driscoll Consulting
Fred Emanuel	Emanuel Engineering, Inc.	Richard Rouleau	UNH Facilities Project Management
Gabe Archambault		Robert Durfee	Dubois & King, Inc.
Antonio Garcia-Palencia	WSP USA, Inc.	Ron Joy	McFarland Johnson, Inc.
Gordon Hoyt		Ross Wood	Hoyle, Tanner & Associates, Inc.
Grant Erickson	WSP USA, Inc.	Ryan McMullen	Hoyle, Tanner & Associates, Inc.
Jay Brown	Structural Systems, Inc.	Sam White	McFarland Johnson, Inc.
Jeffrey Karam	Evergreen Structural Engineering, PLLC	Sean Brown	Hardesty & Hanover
Jillian Semprini	Hoyle, Tanner & Associates, Inc.	Sean James	Hoyle, Tanner & Associates, Inc.
[†] Josh Lund	McFarland Johnson, Inc.	Tim Polson	WSP USA, Inc.
[†] Josif Bicja	Hoyle, Tanner & Associates, Inc.	Tom Kilrain	Department of the Navy
Karie James	WSP USA, Inc.	* Tom Lamb	TFMoran, Inc.
Katelyn Welch	Hoyle, Tanner & Associates, Inc.	Tyler Moore	
Kayla Hampe	Hoyle, Tanner & Associates, Inc.	* <i>speaker</i>	

Business Portion of the Meeting

BUSINESS PORTION

- Tom announced the list of our annual corporate sponsors.
 - Those interested in sponsorship can contact Cassi or any Board Members.
- Tom, Josif, and Sean up for renewal. SENH is currently accepting additional nominations through end of the month of April.
 - Voting will be held in May.
- Excellence in Structural Engineering Award applications due Friday 4/2/21.
- Donations for SENH scholarship fund.
- Kayla – upcoming NECSEA Virtual Conference coming up April 7-8.
- Next meeting May (annual meeting)

UNH Student Group Presentation

Gabe Archambault, Tyler Moore and Gordon Hoyt, Civil Engineering Seniors at UNH, presented a culvert replacement project they are working on as part of their Senior Capstone project. Kayla Hampe, PE of Hoyle, Tanner & Associates, Inc. is serving as a mentor to the team.

March Meeting Attendance List & Meeting Minutes

Member Presentations:

- East Kingston Bridge Rehabilitation Using PBU's and UHPC

Josh Lund, PE of McFarland Johnson presented on a bridge rehabilitation project on NH Route 107A in East Kingston, NH over PanAm Railway. This project utilized Prefabricated Bridge Units (PBU's) with Ultra-High Performance Concrete (UHPC) to replace the bridge deck and rehabilitate the superstructure with tight schedule constraints working over the railroad. The project represented the first time NHDOT utilized these elements together on a project.

- Design and Construction of Blenheim Covered Bridge

Josif Bicja, PE of Hoyle, Tanner & Associates, Inc. presented on the replacement of the Old Blenheim Bridge located in North Blenheim, NY. The bridge was a single-span, double-barrel Long Truss wooden covered bridge built in 1855 that was destroyed by flooding from Tropical Storm Irene in 2011. The project team designed a replacement timber structure with a total length of 228', comprised of three trusses, one of which utilizes a built-in timber arch. The design and construction required a unique preloading sequence to ensure sustained compression in the counter diagonals. The new bridge, which was constructed in 2018, is one of the longest single-span covered bridges in the world, and only one of six double-barrel covered bridges in the country.

- Renovation of the Historic Jewett Piano Case Factory

Tom Lamb, PE of TFMoran presented on the conversion of a timber-framed mill building into an apartment building. The existing structure required substantial structural upgrades and repairs to address a nearly 1-foot lean of the building, significant water damage, flood plain elevation and lateral instability issues. The structural repairs included internal steel frames and were developed to preserve much of the building's exterior historic aesthetics. The project successfully transformed a historic mill building that had suffered from years of neglect into a 43-unit affordable residential apartment building.

Excellence in Structural Engineering Award Nominees

Awards Category: **Bridge Structures**



DESIGN CHALLENGES

- The new structure will need to appear as a scaled-down model of the original bridge with similar truss geometry, but as a one-lane pedestrian bridge instead of a two-lane vehicle bridge.
- The consultant's responsibility includes leading charrettes to build consensus among 8 groups holding jurisdiction over the project—in a short period of time.
- The consultant is responsible for developing economical, constructible alternatives that resemble the previous structure.

CONSTRUCTION CHALLENGES

- The 1909 bridge would not support snow loads in the coming winter for this two-year project.
- The sewer line cannot be maintained in place during construction.
- Planned construction access employs nearly exclusive use of bridge boats. At the time of the contract award, the team is notified that the river will be drawn down for a dam project downstream. Water levels will not support the boats.

DESIGN SOLUTIONS

- The consultant collected input from all 8 groups to develop alternatives for parties to review.
- The consultant worked with the Town, two historical groups, and NHDHR to select a look that is constructable, and facilitated the salvage of one original bridge portal for an interpretive display.
- Using modern practices, the consultant designed an economical prefabricated structure with the appearance of a historic structure. (38-second timelapse installation video: youtu.be/p1Ds0ZE2UQg)

CONSTRUCTION SOLUTIONS

- Explosive demolition was selected (34-second demolition video: youtu.be/F4s6J_rbJ2Y)
- The contractor installs an innovative and cost-effective temporary sewer bypass.
- The contractor builds a causeway in the river to provide safe construction access at no additional cost to the client.

Project Name: Lilac Pedestrian Bridge

Project Location: Hooksett, New Hampshire

Structural Design Firm: Dubois & King, Inc., Laconia, NH

Project Highlight:

DuBois & King led study and design for a replacement of the Lilac Bridge with a prefabricated truss bridge. The new bridge maintained the appearance of the previous bridge—a historic high Pratt through truss bridge constructed in 1909 over the Merrimack River. The existing bridge was bypassed and closed to vehicles in 1976 and closed to pedestrians in 1995. The new bridge reestablished a safe sewer crossing and pedestrian connectivity in the historic district.

Excellence in Structural Engineering Award Nominees

Awards Category: **Building Structures**

Project:

School Street Parking Garage
New Addition & Redevelopment

Project Location:

Concord, New Hampshire

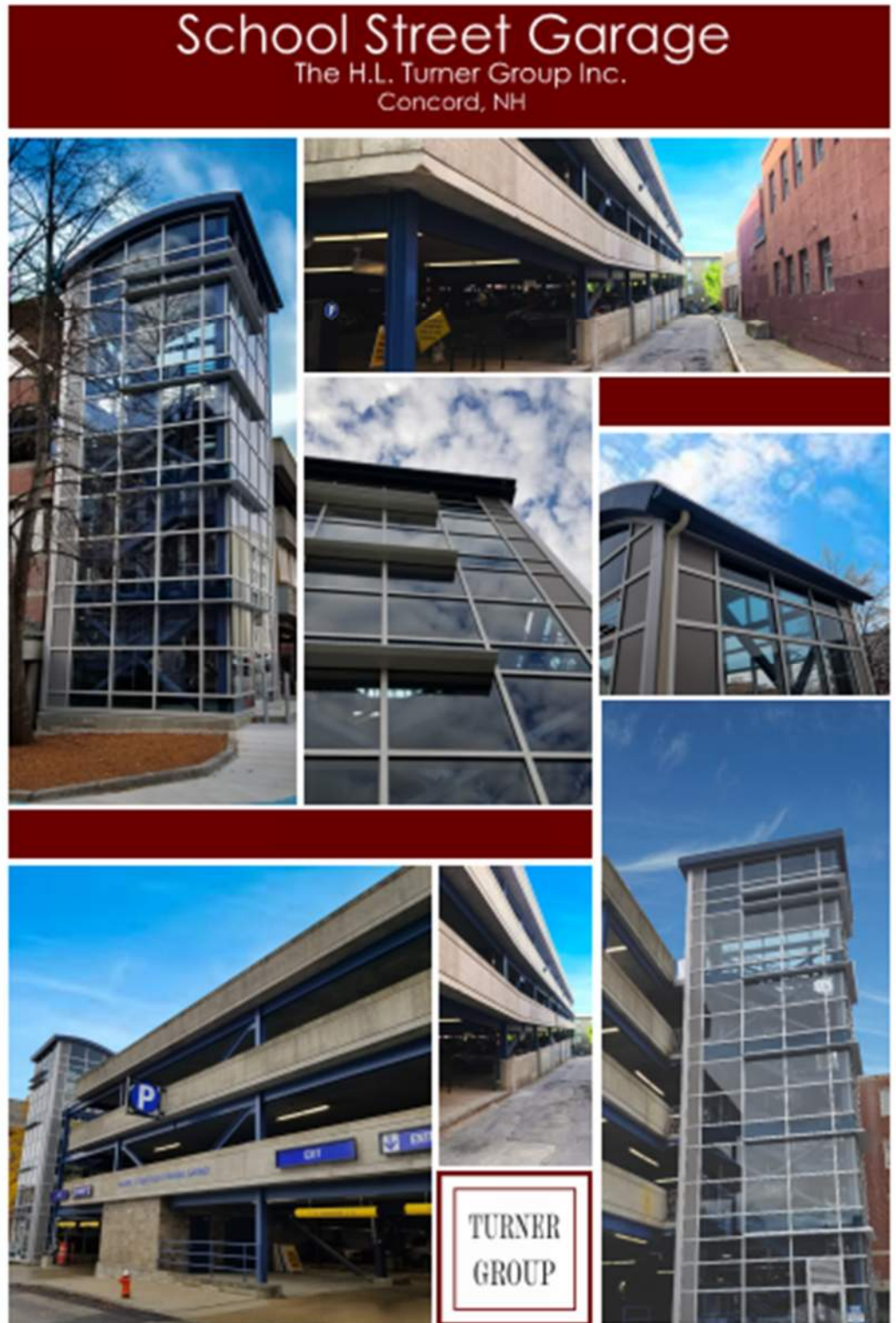
Design Firm:

The H.L. Turner Group, Concord, NH


Project Highlights:

The Turner Group was selected by the City of Concord as architects and engineers for design and construction administration of the renovation and restoration of this 459 space parking garage. The five-story structure is framed with structural steel with cast-in-place concrete, post-tensional slabs.

The designs included two new stair towers; elevator; restoration of concrete, steel and brick; new traffic membrane, expansion joints; new drain piping system; signage; maintenance room; and many other renovations, restorations and upgrades to this 1984 vintage parking garage.



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