



STRUCTURAL ENGINEERS OF COLORADO

NEWSLETTER

2021 SPRING SCHEDULE
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AT

[HTTPS://](https://seacolorado.org/)

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What's Gray, Rock Hard and ALWAYS Cracks?

May 13 2021

Via Webex

6pm

SEAC Meeting

May 20 2021

Via Webex

7:30am-9:00am

SEAC Business Management Committee Meeting

June 10, 2021

7:30am-9:00am

May General Meeting

SEAC May General Meeting

May 20, 2021

virtual

7:30am-8am—Announcements and Networking

8am-9am—Presentation (1 PDH)

Thermal Bridging

Brandon Andow, PhD, AIA, NCARB

Senior Building Performance Analyst—EYP

Abstract:

In process.

Speaker Bio:

Dr. Brandon Andow believes the influence of a building's facade is more than skin-deep. Energy efficiency, human factors, and placemaking shape building enclosures while encouraging architects and engineers to push the boundary of what's possible. He is committed to creating practical exteriors that are transformative and meet striding energy targets – all while making occupants happier, healthier, and more productive.

For 18 years, Brandon has been designing and analyzing the next generation of facades for new and existing buildings, including materials research in switchable transparency nanostructured thin-films for solar control and energy harvesting. He's active within the facade community through peer-reviewed publications, teaching appointments, lectures, and conference presentations. But his passion is offering innovative approaches that will impact the building envelope of tomorrow. He wants to help owners achieve transformative, reliable, and cost-effective building enclosures that elevate their occupants and their organization.

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PRESIDENT'S MESSAGE

Structural Engineers Association of Colorado

The first Earth Day in 1970 inspired 20 million Americans — at the time, 10% of the total population of the United States — to take to the streets, parks and auditoriums to demonstrate against the impacts of 150 years of industrial development which had left a growing legacy of serious human health impacts. Within a decade over six environmental legislative acts were passed, and the EPA and OSHA were launched. Initially, the environmental focus did not impact structural engineering per se, however, as the built environment advances and creates buildings that are higher performing, the global impact of our construction materials, where they come from, how they are processed, what they are made of — is becoming increasingly important. On a number of larger projects, we have been asked to consider materials that reduce “embodied carbon”. Embodied carbon is the carbon dioxide (CO₂) emissions associated with the materials and construction process throughout the whole lifecycle of a structure.



Cement production creates approximately 7% of the *world's* CO₂ and is the largest contributor to embodied carbon in the built environment accounting for approximately 50% of the overall carbon footprint of new construction between now and 2050*. The world's building stock is expected to double by 2060, with concrete being the most abundant human-made material. If you have not heard of embodied carbon, you will. Cement production methods will be changing, and concrete strength, ingredients, and specifications will have to change, too.

It is my hope the structural engineering community will rally to be a vector of positive change in how we approach the oncoming onslaught of environmental concerns; cement and concrete are the tip of the iceberg. Being on the forefront of environmental innovation will set us up as leaders and lend our voices more weight moving forward. To this end (and others), I support SEAC's Education and Scholarship Committees. The Education Committee focuses on technical and business education and this year the Scholarship Committee was able to provide two \$3,000 scholarships to upper-class students attending an accredited engineering school with a stated intention to practice structural engineering in Colorado.

Supporting these future innovators to help us meet these challenges is a step in the right direction. Instead of passengers, let's be crew on this trip and drive.

Stay safe,

Lacey Goetz

* Carbon Cure website: <https://www.carboncure.com>

Welcome to our Newest Members

Erin Kinder
Professional Member
Sean Lamb
Professional Member
Thomas Lutza
Affiliate Member

Samuel McGlamery
Professional Member
Andrew Palfy
Affiliate Member
Keith Porter
Professional Member

Lee Schissler
Affiliate Member
William Young
Professional Member

COMMITTEE NEWS

Structural Engineers Association of Colorado

EDUCATION COMMITTEE

Courtesy of Glacier National Park Archives.



Many Glacier Hotel takes spotlight in SEAC's first project presentation of 2021

SEAC members and guests on April 27 learned what it takes to rescue a century-old, iconic hotel from the brink of closure. SEAC's Education Committee was proud to host JVA structural engineers Ian Glaser, PE and Brett Robinson, PE, for a presentation on the strengthening and restoration of the Many Glacier Hotel in Montana's Glacier National Park.

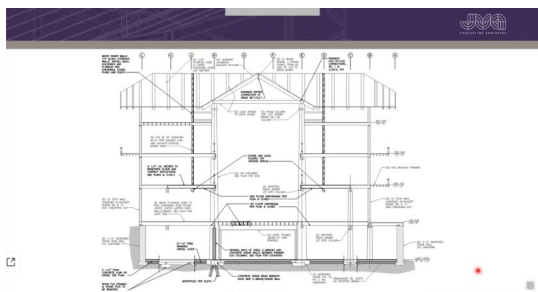
The virtual event marked SEAC's first project presentation of 2021. Glaser and Robinson shared stunning photos of the timber-framed hotel built in the 1910s by the Great Northern Railway. The \$42 million project spanned more than a decade and breathed new life into a hotel that the National Trust for Historic Preservation in 1996 called one of America's "Most Endangered Historic Places." Glaser and Robinson along with other JVA staff tackled a host of life safety issues during the project, including deteriorated and compromised framing and an inadequate lateral force resisting system. Glaser and Robinson shared with viewers some of the challenges of the project, including the park's high design snow loads; remote location; short operating seasons; scarcity of worker housing; and sparse cell phone reception. This project was the 2018 NCSEA Awards winner in the Forensics/ Renovation/ Retrofit/ Rehabilitation Structures over \$20M category.

This SEAC webinar drew roughly 115 attendees at its peak, making it one of the more highly attended project presentations in the recent history. The recorded presentation will be shared on SEAC website and social media.

Other articles/ references:

[STRUCTURE magazine | Preserving the Many Glacier Hotel](#)

[Anderson Hallas Architects' Rehabilitation of Many Glacier Hotel - Traditional Building](#)





SEAC EDUCATION COMMITTEE MAY MEETING INVITE TO NEW PROSPECTIVE MEMBERS

“ Think outside. No BOX needed.”

Education Committee Happy Hour & Hike



DATE: Thursday, May 13, 2021

MEETING TIME: 4:30pm at the
North Mesa Trailhead near Golden

(Additional Information below)



<https://campaholics.biz/c/chairs-tables/>

The SEAC Education Committee will host their May meeting outdoors, for a change. We will have a shorter meeting focusing on the 2021 SEAC Fall Seminar & August Project Presentation planning - which will be followed by a hike to the top of the North Mesa.

WOULD YOU LIKE TO JOIN US?

Bring a camping chair/ mask/ hiking shoes and dress appropriately.

The committee is looking for excited and motivated members to join our team. This is a great time to join and learn more. If you are interested in attending, having some refreshments & drinks and meeting our group, please **RSVP at EducationSEAC@gmail.com by Tuesday May 11th.**

Trailhead Information: MEET AT THE WEST TRAILHEAD PARKING LOT

<https://dayhikesneardenver.com/north-table-mountain-trail-hikes-golden-colorado/>

[North-Table-Mountain-Park-Map \(1700x2600\) \(jeffco.us\)](#)



Courtesy of Mark Bryant Photography



Courtesy of Burkett Design



Courtesy of JE Dunn

COMMITTEE NEWS

Structural Engineers Association of Colorado

DENVER BUILDING DEPARTMENT LIAISON COMMITTEE

The City and County of Denver is planning to adopt the 2021 I-Codes later this year. As such the Denver Building Department Liaison Committee (DBDLC) will begin meeting in the near future (hopefully in person) to review existing Denver amendments and to consider new amendments to the structural provisions in the IBC, IEBC, and IRC that we will propose for adoption.

As in the past, the City's intention is that provisions in the I-Codes should be amended for the Denver Building Code only where they are deemed to be in need of clarification, modification, or elimination, or to incorporate physical, environmental, and custom-ary design and construction practices specific to the Denver area.

At this time, the committee has openings for additional members. If you are interested in participating in this endeavor please contact the committee chair, Jerry Maly, at 303-914-4300 or jmaly@wje.com.

Also, if you are aware of a structural provision that you believe should be amended, and you would like the DBDLC to consider an amendment proposal for the reasons described above, please contact the chair.

EXISTING STRUCTURES COMMITTEE

Do you have a question about the IEBC or a question about an existing structure you don't quite know how to handle?

If so, SEAC's Existing Structures Committee wants to help you.

The International Existing Building Code can be pretty complicated to figure out, and it is always changing. If you have questions that you have wondered about or see a new provision that makes no sense, we would love to hear from you. Please email your question to our Board liaison, at yp@seacolorado.org, and we will get an answer for you.

We would like to help our membership with these issues by providing this "helpdesk" service. This will also help us so that we understand the areas that cause the most confusion. Our committee gets involved with reviewing and suggesting new code changes, so this information will be useful.

SEAC SCHOLARSHIP AWARDS

This year's recipient of the SEAC Scholarship is Alexander Wood. Alex is a senior at the Colorado School of Mines and will be a graduate student at Mines in the fall. An excellent student with a 3.9 GPA, Alex is also the secretary of the ASCE Student Chapter at Mines and a Community Director for the Department of Residence Life.



This year, the SEAC Scholarship Fund elected to award a Development Award to Grace Tandus. Grace will be a senior this fall in the Colorado Mesa University/CU Boulder Engineering Partnership Program. This year, Grace cofounded an Engineering Without Borders Chapter at Colorado Mesa University and helped to organize their first service trip to the Navajo Nation.



If you would like to support the SEAC Scholarship program, please complete the pledge form at <https://seacolorado.org/docs/SEAC-Scholarship-Pledge-Form-2015.pdf>.

COMMITTEE NEWS

Structural Engineers Association of Colorado

SEISMIC COMMITTEE

The Seismic Committee Chair, Rob Jackson attended the BSSC Council Meeting and Symposium on 2020 NEHRP Provisions. The following resources are provide for your information:

- You can review/download the **recordings** (closed captions are available), **presentation slides**, and **FEMA NEHRP Publications** here: <https://www.nibs.org/events/bssc-council-meeting-and-symposium-2020-nehrc-provisions>
 - You can generate you free **Professional Development Hours (PDHs)** here (this ONLY applies to those who attended the live sessions). <https://www.nibs.org/events/nibs-certificates>
 - You can check out the **BSSC (Hazard) Tool for 2020 NEHRP Provisions Seismic Design Map Values**. <https://www.wbdg.org/additional-resources/tools/bssc2020nehrc>
 - And more resources at: <https://www.nibs.org/bssc> (check out the BSSC video if you missed that!)
-

YOUNG MEMBERS GROUP

Mass Timber Product Presentation Spotlight

The SEAC YMG hosted a Mass Timber Product presentation on Wednesday, March 24th. This presentation provided information about the distribution chain for wood construction, various wood products and economic considerations to keep in mind when detailing timber projects. We also reviewed current market conditions, lead times and material price fluctuations due to the COVID-19 pandemic. 7 engineers attended this virtual presentation.

A special thanks to the presenter, Jeremy Crandall of Lam-wood Systems, Inc. for sharing his insight and expertise with the Young Member Group.

Save the Date for the 2021 Gingerbread Bridge Competition

Get ready to dust the candy cobwebs off your old design plans because the SEAC YMG is excited to start planning the 2021 Gingerbread Bridge Competition. The event is tentatively scheduled for Friday, November 19th.

We are hoping to hold the event in person, but will have backup plans for a modified event if required by the health climate in November.

SEAC YOUNG MEMBER EVENT

Structural Engineers Association of Colorado

What's Gray, Rock Hard and ALWAYS Cracks?

Speaker: James Raymond Baty II, FACI, FTCA, Concrete Foundations Association, Tilt-Up Concrete Association

Date/Time: Thursday May 13th at 6pm MT (7pm CT)

Location: Virtual Presentation

Executive Summary: Although a relatively simple mixture by design, consisting primarily of common earth elements; water, sand, rock and cement powder, the world's most consumed construction material can best be described as a complex animal. Despite being the most widely used, it is quite possible the most misunderstood. Concrete is both aesthetic and structural and the two are in diametric opposition, so much so that when the inevitable happens...the crack...the entire project team is left confused and more than a little annoyed. This presentation will look at cracking in concrete from the perspective of the basic nature for cause and effect and deliver ideas for mitigation and repair solutions. James Baty, the presenter has been in the concrete industry for thirty years, involved in many forms of both cast-in-place and precast concrete building elements performing as both plain structural and structurally-reinforced. The presentation will offer a platform for inviting and answering many of the perplexing crack scenarios found in projects today.

What will be covered:

- Distinguishing crack patterns and causes
- Determining cracking concerns and solutions
- Cracking in slabs, below-grade walls and above-grade panel constructions
- Common industry references for direction

Speaker Bio:

James Raymond Baty II, FACI, FTCA

Concrete Foundations Association | Tilt-Up Concrete Association

Mr. Baty is an owner and president of SB2, an association management firm located near Cedar Rapids, IA. Currently he is the Executive Director for the Concrete Foundations Association and provides technical direction for the Tilt-Up Concrete Association where he is also a fellow. Serving these industries, he frequently provides education on concrete construction and design topics as well as energy performance for buildings.

NCSEA NEWS

Structural Engineers Association of Colorado

EXCELLENCE IN STRUCTURAL ENGINEERING AWARDS

Each year at the Structural Engineering Summit, NCSEA awards the Excellence in Structural Engineering Awards. This program annually highlights some of the best examples of structural engineering ingenuity throughout the world. Structural engineers and structural engineering firms are encouraged to enter the awards program. Projects are judged on innovative design, engineering achievement, and creativity.

The awards are presented in eight categories:

- New Buildings < \$30 Million
- New Buildings \$30 Million to \$80 Million
- New Buildings \$80 Million to \$200 Million
- New Buildings Over \$200 Million
- New Bridges or Transportation Structures
- Forensic/Renovation/Retrofit/Rehabilitation Structures < \$20 Million
- Forensic/Renovation/Retrofit/Rehabilitation Structures > \$20 Million
- Other Structures

Entries are due on July 13, 2021. The winners are honored in STRUCTURE and at NCSEA's Structural Engineering Summit that will take place this October. [View last year's awards celebration here.](#) More information about the awards can be found on www.ncsea.com.

NOW HIRING!

HCL is adding Structural Engineers to our Greenwood Village office.

Qualifications include:

- Experience in the design of residential and/or commercial buildings
- Experience with RAM, RISA 3D, ETABS, Tedds, and/or TSD software
- Experience designing with steel, concrete, masonry, and/or wood

For additional information and to apply, visit HCLengineering.com/careers



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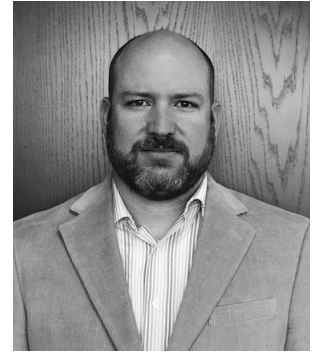
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We Want to Hear from YOU! The SEAC Board of Directors is interested in hearing your suggestions, comments, and ideas. Please feel free to contact a member of the BOD at any time.

Thank you to all of our members who continue to support SEAC!

NEWSLETTER ADS

Structural Engineers Association of Colorado



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Consider placing an ad in the bi-monthly SEAC newsletter to reach over 300 members, including professional engineers, suppliers, and vendors.

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