



CONNECTIONS

October 2017 Volume 17 Issue 9

Newsletter of the
Structural Engineers
Association of Oregon

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IN THIS ISSUE: PAGE

■October Lunch Meeting Announcement	2
■Presidents Message	3
■Member of the Month, New Members, YMF Activities	4
■SEAO Excellence in Structural Engineering Awards	5
■SEAO Scholarship Recipients	7
■Website Update, Ask a Question, ASCE Seminar	8
■Employment Opportunities	9
■ASCE Meet a Civil Engineer Day Flyer	10
■IBC Update	11
■October Vendor: DeWalt	12

SEAO has a twitter
account and can be
followed at
@SEAOregon.



Upcoming SEA0 Meetings and Events:

Thursday, October 19, 2017: YMF Happy Hour

Location: White Owl Social Club, 1305 SE 8th Ave., Portland, OR

Time: 5:30pm

See page 4 for additional YMF information.

Thursday, October 19, 2017: SEA0 Fall Seminar— Frequently Misunderstood Seismic & Wind Related Topics of ASCE7

Location: Sheraton Hotel & Conference Center, 8235 NE Airport Way, Portland, OR

Time: 8:30am-4:30pm

PDH Credit: 6 hours

See seao.org for additional information.

Wednesday, October 25, 2017: SEA0 Lunch Meeting

Topic: AISC 341- Seismic Provisions for Structural Steel Buildings

Speaker: James O. Malley, PE, SE

Location: Bridgeport Brewery, 1313 NW Marshall Street, Portland, OR

Time: 11:30am

PDH Credit: 1 hour

See page 2 for additional information.

Saturday, November 11, 2017: Meet a Civil Engineer Day

Location: Kearney Hall, OSU Campus, Corvallis OR

Time: 10:00am-4:30pm

PDH Credit: 1 hour

See page 10 for additional information. RSVP by October 18th.

DUES REMINDER

Annual dues for SEA0 membership are due on **October 31, 2017**. You can make checks payable to SEA0 and mail to:

9220 SW Barbur Blvd, No. 119
Portland, OR 97219

Or renew online using a credit card by going to: www.seao.org

Renewals: Member (licensed PE in Oregon): \$102
Affiliate Member: \$95
Student Member: \$16.50
Retired Members: \$25

Membership must be current (dues paid) to have your name included in our annual roster.

To update our records, please be sure that we have your correct address, name of your company, current phone numbers, and your email address. This will guarantee that you are receiving all correspondence and information from SEA0. You can update your information online, or if you have any questions contact jane@seao.org.

CONNECTIONS is a monthly publication of the Structural Engineers Association of Oregon, published to disseminate current news to our membership and others involved in the profession of structural engineering. The opinions expressed reflect those of the author and, except where noted, do not represent a position of SEAO.

Send membership inquiries to:

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OCTOBER LUNCH MEETING WEDNESDAY, OCTOBER 25, 2017

Upcoming Changes to AISC 341—Seismic Provisions For Structural Steel Buildings

ABSTRACT:

American Institute of Steel Construction (AISC) document 360-10 "Specification for Structural Steel Buildings", is the basic reference for the design, fabrication and erection of structural steel buildings and other "building-like" steel structures in the United States. When applied in conjunction with AISC 360, AISC 341-10, "Seismic Provisions for Structural Steel Buildings", is the standard reference document for the seismic design of steel structures throughout the United States. Balloting has completed to update AISC 341-10 for the 2016 edition that will be incorporated with ASCE 7-16 and AISC 360-16 into the 2018 IBC. The document has significant technical modifications including new material specifications, use of steel braced diaphragms, new column splice details, changes to BRBF provisions, requirements for SCBF gusset plate welds, application of demands on columns that participate in intersecting frames and a number of other items. In addition, significant new provisions related to the seismic design of multi-tier braced frames are provided. A new composite shear wall system was also developed for inclusion into this edition of the Provisions. This presentation will summarize the changes to the 2016 edition of the AISC Seismic Provisions.

PRESENTER BIO:

James O. Malley, SE

Senior Principal, Degenkolb Engineers



James O. Malley, S.E., is a Senior Principal with Degenkolb Engineers. He received both his Bachelors and Master's Degrees from the University of California at Berkeley. Mr. Malley has over 30 years of experience in the seismic design, evaluation and rehabilitation of building structures. He was responsible for the analytical and testing investigations performed as part of the SAC Steel Project in response to the Northridge earthquake damage. In 2000, AISC presented Mr. Malley its' Special Achievement Award. Mr. Malley is Chair of the AISC Specifications Committee and the Past-Chair of the AISC Seismic Subcommittee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was given presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS Subcommittee on Seismic Welding Issues.

Mr. Malley was also one of the authors of the PEER Tall Buildings Institute "Guidelines for the Performance-Based Seismic Design of Tall Buildings" and is involved in the peer review of numerous tall building projects in areas of high seismic risk. Jim has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001 and SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. He also was a member of the Board of Directors of NCSEA, serving as President in 2010-2011. Mr. Malley also served as a member of the Board of Directors of EERI and is presently on the Board of the Applied Technology Council.

DETAILS:

Location: Bridgeport Brewery, 1313 NW Marshall Street, Portland, OR

Logistics: Street parking, closest lot: City Center Parking garage 1469 NW Johnson, close to streetcar stop

Time: 11:30 am — Check in
11:45 am — Lunch
12:00 pm — Program

Cost: \$32 — Prepaid Members
\$20 — Prepaid YMF Members
\$42 — Prepaid Non-Members
Free — Students

Reservations: Pre-registration is required for all.

You can register and pay online at www.seao.org before noon, Friday, October 20. You can also register with Jane Ellsworth via phone at (503)753-3075 or via Email: jane@seao.org. Note: No-shows will be billed.

PDH Credit: One PDH has been recommended for this program.

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NCSEA & WCSEA/NWC
Seth Thomas

PRESIDENT'S MESSAGE

By: SETH THOMAS, P.E., S.E.

SEAO Members,

Welcome to the new (SEAO) year. I am excited to serve as the president for the next year – I would like to thank all of our members for the opportunity to be in this role. Before I begin, I would like to thank the outgoing board members for their service: Pat Merriman, Gary Lewis, and Lindsey Weisgerber have finished their roles on the board and Phil Davis, Kevin McCormick, and JoMarie Farrell are continuing along for another year. I would like to extend a special thanks to Kevin for his work as president last year (and VP the year before). This year's board is fortunate to have your expertise around another year. I would like to also introduce our new board members, Dusty Andrews (secretary), Chad Norvell (Director), and Norm Farris (VP) – thank you for stepping up and being a part of this organization.

One of the big goals over the next year is to revamp the SEAO website. For those of you who use the website you know that the website is old and clunky with lots of text and a lot of outdated content. Some of the goals for the website redesign that we have already established are a better user interface (including for mobile devices) with less chunks of text and more graphically friendly. Another item we would like to address is the back end infrastructure – currently getting the website formatted is a time consuming process, we want to make updating the website as streamlined as possible to help ensure we have current content without wasting a bunch of time for the volunteers who update the website. We also want to add a better user portal – which could include a way to document PDH hours.

These are ideas the board has had, but the most important thing is to have the website that benefits the membership – we want to know what you would like to see in the SEAO website. Please let us know about things you like and don't like, things you want to see, or things you like about other websites that we can incorporate. Please send any feedback to myself (seth.thomas@kpff.com) or Aaron Burkhardt (aaron.burkhardt@kpff.com) who is assisting the board in the website updated. As part of this effort we are putting together a membership survey that will be sent out in the next month or two – please help us out by responding to the survey. This website rebuild is a big effort of both time and money so we want to make sure we are providing a product that the membership will find useful and worthwhile.

The SEAO board is also tasked with putting together the content for the monthly meetings and all day seminars. It can often be a challenge to know what the membership may be interested in – the board has worked very hard to provide quality speakers, but it is always good to hear from the membership what kind of topics everyone is interested. If you have any ideas for topics or speakers I would encourage you to reach out to one of your board members (their names and emails are on page two on the left). This month we have a great presentation on the newest edition to the steel seismic provisions. These changes might not be code yet, but as responsible design professionals it is part of our job to be up to date on the most current information relating to best practice design. There are some big changes that will be discussed in the presentation and it will be worth your time to attend.

-Seth Thomas



VENDOR ADVERTISING

SEAO is now accepting vendor advertising!

Cost of a full page ad running for one month:

\$250 - Members

\$350 - Non Members

For more information, contact Jane Ellsworth at jane@seao.org.

MEMBER OF THE MONTH

Sarah McClelland, PE

Molded Fiberglass Inc.

The board would like to recognize Sarah McClelland as member of the month for October.



This summer Sarah stepped down from her role as newsletter chair in time for her and her husband Jim (also an engineer) welcomed their first child. Sarah did a fantastic job putting together the SEAO newsletter each month for the last few years. Most people don't know but the newsletter chair has the task of not only assembling and editing the newsletter each month but corralling a bunch of volunteers into getting their information submitted on time only to have to quickly assemble the newsletter and get it published in time so it can be sent out before the monthly meeting. Prior to working as the newsletter chair Sarah was an active member of the YMF and participated in their education outreach program visiting local middle/high schools.

Sarah works for molded fiberglass Inc in Beaverton doing what she enjoys most, finite element modeling. Sarah is a native of Texas but has been in Portland for almost 10 years. Sarah and her husband Jim welcomed their first child this summer and they both enjoy the outdoors including hiking and sailing. The SEAO board would like to thank Sarah for her time and dedication to SEAO!

NEW MEMBERS

The new SEAO members for October are:

- Chris Hill – KGA
- Zakary Hoyt – MD Structural Engineering
- Bahaar Taylor – Ericksen Structural
- Jason Holland – SSOE
- Erica Fischer – Self employed
- Cheng-Min Pao – BDS
- Dave Morris – McGee Engineering
- Stuart Garth – Peterson Structural Engineers
- Dan Serra – Knife River Prestress
- Ed Tornberg – Rimkus Consulting Group
- Matthew Bullard – HHPR
- Richard Thomsen – Helser Industries
- Lucas Liewellyn – HHPR
- Katherine Bedaywi – HHPR,
- Sam Ozuna – Cascade Engineering
- Samuel Rediske – M Group

Welcome to SEAO!

Our goal is to provide benefit to our members and the best way to do that is get involved! Watch the emails, newsletters, and website for more information!

YOUNG MEMBER FORUM ACTIVITIES

Upcoming YMF Events:

Thursday October 19th – Happy Hour

Location: White Owl Social Club

Time: 5:30pm to ~7:00pm

Appetizers will be provided, drinks are not. No need to RSVP, grab a friend and come meet other younger members!

NOTE: Monthly lunch meetings are discontinued unless a specific event is planned

YMF Website:

Please visit our website for more information on YMF events:

seao.org/committees/advocacy/ymf

THIRD ANNUAL SEAO EXCELLENCE IN STRUCTURAL ENGINEERING AWARDS

BY: *BRYNN ADKINS*

Congratulations to the 2017 Excellence in Structural Engineering Awards Winners!

Renovation / Retrofit

Titus Will Adaptive Reuse
WDY, Inc.



This 50,000 square foot, two-story structure underwent occupancy changes which triggered a full seismic upgrade. The seismic system was composed of added steel special moment frames combined with existing ordinary reinforced concrete shear walls in one direction, and added steel special braced frames in the orthogonal direction. The added frames allowed the existing large storefront openings to remain.

New Buildings Under \$10M

Athey Creek Christian Fellowship
VLMK Engineering + Design



One challenge in constructing this new church was locating 34-to 37-foot tall concrete tilt panels on top of 12-inch wide cast-in-place concrete walls. Custom-made steel embeds made it possible to precisely place the panels. Tilt-up panels elsewhere in the building spanned as high as 53 ½ feet, which required especially long pipe braces. The tilt-up construction allowed the church to incorporate 12-foot high windows in the sanctuary.

New Buildings Over \$10M

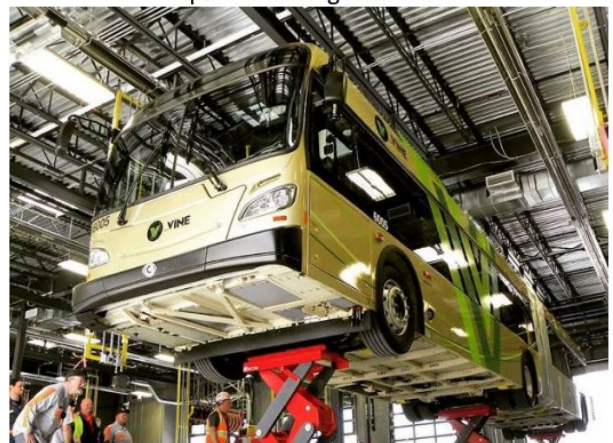
Q21 Mixed Use
Nishkian Dean



This seven-story mixed-use structure utilized unique steel columns made from two 12-sided tapered sections welded together at the center to create double-tapered columns. Non-structural concrete tilt-up wall panels 35 feet tall were re-used from the warehouse originally on site. Foundations were found on micro-piles along the west property line to avoid additional excavation and to preserve existing CMU walls.

Special Use Structures

**C-Tran 4th Plain Bus Rapid Transit Corridor
& Maintenance Facility**
Equilibrium Engineers LLC



This project was the first bus rapid transit system in SW Washington and the Portland Metro Area. "Walking sticks" at the stations along the 6-mile corridor were created by randomly angled structural tube steel posts that required intricate connections. The Vancouver Mall received a new transit center, and the maintenance facility was expanded by 16,000 square feet to accommodate the new 60-foot long hybrid buses.

THIRD ANNUAL SEA0 EXCELLENCE IN STRUCTURAL ENGINEERING AWARDS

BY: *BRYNN ADKINS*

Jurors' Favorite

This year the jurors believed there was one project which stood out among all the rest. Congratulations to KPFF Consulting Engineers for winning the award of *Jurors' Favorite* with their work on the **Portland Japanese Garden | Cultural Crossing**



The existing Japanese Garden was expanded to accommodate rapid visitor growth and the new Cultural Village added four buildings, a site bridge, and a several retaining walls. The architecture was designed by a world-renowned architect who combined traditional Japanese architecture with modern materials. The ticket pavilion is laterally braced by moment frames with columns built from 2x4 steel bars. The site bridge spans over 40 feet between trees and is made from HSS framing, concrete topped metal deck, and glass guardrails. With this minimalistic framing, the bridge appears to float over the ravine. The Umami Café is a 1,200 square foot glass-enclosed jewel box that cantilevers out over the ravine as far as 14 feet. Both the café and the site bridge are founded on micro-piles, shallow grade beams, and foundation tie-backs due to the active ancient landslide on the site which creeps downhill at roughly one inch per year. Just beyond the Umami Café is the Cultural Village plaza which holds two larger, two-story buildings. These buildings presented designed challenges because of their steeply pitched roofs and geometric variations. Both buildings utilized CMU shear walls for their lateral force resisting systems. Sliding glass partitions and wood screens at corners were made possible by cantilevered HSS beams. All buildings feature large roof overhangs on all sides which were created from tapered WT sections. Permanent tie-back soldier piles and shotcrete walls were designed to support the 32-foot vertical excavation cut to create the space for the Cultural Village. In front of one of these walls is a 16-foot tall “Zagunis Castle Wall” which was built out of hand-cut stone by a 16th generation Japanese Master Stonemason. Overall, this massive project required acute tension to detail and immaculate coordination within the design team. The result is a space that Portland residents and visitors will be able to enjoy for generations to come.

The Awards Committee is looking for new members! If you or someone you know is interested, contact Brynn at brynn@wdyi.com for more information

2017-2018 SEAOSF SCHOLARSHIP RECIPIENTS

Don Kramer Memorial Scholarship

Cody Beirsto is starting his graduate studies at Oregon State University (OSU) with a dual major of Civil (Structural emphasis) and Wood Science Engineering. He is past president of the student ASCE chapter and the incoming president for the first student ASCE-SEI group at OSU. Cody served as the mix design leader for OSU's concrete canoe and wrote the ASCE Mead paper on ethics which he presented at the conference.



Sue M. Frey Memorial Scholarship



Kimberly Williams is a first-generation college student and is beginning her senior year at Portland State University (PSU) and expects to graduate next summer. She then is planning to work on her masters degree. She will be assisting graduate student research at PSU's iSTAR Lab studying resiliency of mass timber systems and is interested in sustainable building materials. In high school through college she has worked as a tutor – which makes her well suited for the Sue M. Frey Memorial Scholarship award.

SEAO Scholarship

Mikhaela Sample is beginning her senior year at PSU and expects to graduate this spring. She has been active in the student chapter of ASCE and in the ASCE steel bridge competition. Mikhaela is also an outreach volunteer for homeless youths.



SEAO Scholarship



Sean Hollenbeck is currently a graduate student at OSU and earned his undergraduate degree at the University of Idaho where he worked with the Army Corps of Engineers. He will be studying for a dual major of Civil (Structural emphasis) and Wood Science Engineering. His area of research is the performance modeling and testing of CLT.

SEISMIC EVENTS

SEAO Seminar:

Thursday, October 19, 2017

Frequently Misunderstood Seismic & Wind Related Topics of ASCE 7.

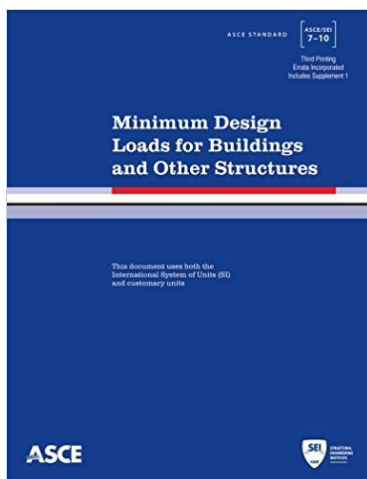
Location: Sheraton Portland Airport Hotel and Conference Center

PDH Credit: 6 hours (in person), 5 hours (viewing video)

Speakers:

- S.K. Ghosh, Ph.D., President, S.K. Ghosh Associates Inc.
- Sandra Hyde, PE, Senior Staff Engineer, ICC Code Development

See attached website for more information.



ASK A QUESTION, GET AN ANSWER

Do you have a code question you would like to ask the Wind Committee or Snow Committee? SEAO is pleased to announce a simple way for Q&A's with technical committees. Email questions to jane@seao.org, and SEAO will direct your question to the appropriate committee chair for a response. Questions and their answers will be made anonymous and available to the membership on the website www.seao.org.

Committees include: Seismic, Wind, Snow, Code, Vintage Building, and Special Inspections.

WEBSITE UPDATE

The SEAO board is looking at overhauling the website in the next year, as our current website is becoming obsolete. The board is soliciting input from the membership to help guide the overhaul process.

We would like to know what features the current website has that you like, dislike, and wish worked better. In addition, what would you like to see added, reorganized, or changed? This website is one of the tools SEAO can offer its membership, and we want to make it as useful as possible for all our members.

If you have any ideas, please contact Seth Thomas (seth.thomas@kpff.com) Aaron Burkhardt (aaron.burkhardt@kpff.com) .

EMPLOYMENT OPPORTUNITIES

Lund Opsahl Structural Engineer Seattle, WA

Lund Opsahl is a growing structural engineering firm located in the SODO neighborhood of Seattle and we are looking to expand our team of exceptional individuals. Lund Opsahl is known for its technical leadership and creative environment. We are a woman owned business and work on a wide range of project types. We value the professional relationships within our firm and we believe those values are fundamental to the development of professional relationships outside of our firm. Collaboration within our office as well as with our clients requires commitment and responsibility. Currently we are looking Structural Engineers of all skill levels.

Please visit our website, www.lundopsahl.com for additional information and job descriptions for each of these positions. You can also send inquires and/or resumes to careers@lundopsahl.com.

EMPLOYMENT OPPORTUNITIES (CONT.)

McGee Engineering, Inc.
Structural Engineer
Corvallis, OR

McGee Engineering, Inc. is an engineering firm located in Corvallis, OR. The Structural Engineer will provide a supporting role in the structural design of buildings to help improve our strength in the commercial building market. Work may include structural design of bridges and related temporary structures. We specialize in bridge engineering, bridge contractor support engineering, and structural engineering. We provide services throughout Oregon, Washington, Alaska, and northern California. We benefit from our close relationships with contractors, and combine our engineering knowledge with construction backgrounds to produce constructible, cost-effective projects. We offer a casual working environment within the intense schedule and performance expectations of a production engineering shop.

Please go to <http://www.mcgee-engineering.com/careers> for a full outline of the position.

Nagamine Okawa Engineers
Structural Engineer
Honolulu, HI

Nagamine Okawa Engineers, one of Hawaii's top structural engineering firms is seeking a hard-working structural engineer with a vision for the future. A BS with concentration in structural engineering is required, and a MS degree in structural engineering is preferred. This is a great opportunity to work on projects involving public agencies and private organizations located throughout Hawaii and the Pacific Rim. We are an award winning firm that has been voted as one of "Hawaii's Best Workplaces" by the Pacific Business News. If you are interested in being part of a great team, please send your resume, references, and college transcripts to georgeg@nagamineokawa.com. We offer a competitive salary, and some of our benefits include: Medical, Paid Vacation/Sick Leave/Holiday, 401(k), profit sharing.

For more information on our company, please visit our website at www.noehawaii.com.

The Tall Wood Design Institute (TDI)
Outreach Coordinator
Corvallis, OR

The TallWood Design Institute (TDI) at Oregon State University is a collaborative effort of the College of Forestry, College of Engineering and University of Oregon tasked with enhancing the use of mass timber and other wood products in the built environment. This position assists in the outreach and education of professionals in architecture, engineering, construction and wood products manufacturing about the use and advantages of wood based construction. The professional audience for TDI outreach includes building code officials, government officials, architects, structural engineers, wood products manufacturers and contractors. This position will facilitate, design and manage all aspects of TDI's outreach program.

To apply for this position, please visit <https://jobs.oregonstate.edu/postings/50378>

KPFF
Structural Engineer
Portland, OR

KPFF Portland Structural is looking for Experienced Structural Engineers who are motivated and interested in an opportunity for growth. KPFF is about freedom to work on what inspires you. Our engineers work on a vast spectrum of projects located around the globe: from anchorage of mechanical systems to complex, non-linear analysis of high-rise structures. We're a group of dedicated, friendly, hard-working professionals with the benefits of a large and stable firm but none of the red tape that comes with it. At KPFF you will work individually and collaboratively in the design and construction process for a wide array of challenging projects. You will work closely with talented engineers, BIM / CAD technicians, architects, project managers, contractors and client teams. Providing first-class service to our clients is what we're about.

If this sounds like an environment you could thrive in, visit www.kpff.com/careers.



The ASCE Student Chapter at OSU would like to invite you to this year's annual

Meet a Civil Engineer Day!

The purpose of the event is to connect professional engineers from multiple disciplines of Civil Engineering with CE students from OSU, PSU, OIT and U of P. There will be an excellent speaker, panel discussions, informal networking opportunities, free food, dodgeball, and much more! **Meet A CE Day will be held on Saturday, November 11th, 2017, in Kearney Hall on the OSU campus.** Check-in time will be at 10:00 AM that morning, and will include donuts & coffee! **The agenda is as follows:**

10:00 am - Check-in time for all attendees

10:30-11:00 - Introductions by all chapters and scholarship awards

11:00-11:45 – Presentation by Allison Pynch, Oregon Section President

“Herd Mentality – Collaborative Engineering on the Elephant Lands Project”

11:45-12:45 - Professional panel Q&A sessions

12:45-2:00 - Appetizers and social mixer

2:30-4:30 - Dodgeball tournament (open to everyone)

Earn 1 PDH for attending.

If you're interested, please fill out the survey below, **no later than October 18th, 2017.**

Or copy and paste the URL below into your internet browser:

http://oregonstate.qualtrics.com/jfe/form/SV_a02h0sFxAb9qOAR

This event is designed by students, for students, in an attempt to grow their professional networks, give them new perspectives, and most important - to have fun!

The event is FREE, but we would welcome and greatly appreciate any donations to the “OSU ASCE Student Chapter.” Donations in the amount of \$25 per individual, \$100 per small firm, and \$250 per large firm, or in any other amount would be very helpful to defray costs and support chapter activities.

1803.5 Investigated Conditions

CHANGE TYPE: Modification

CHANGE SUMMARY: The requirements addressing the evaluation of rock materials for foundation support have been updated to be more consistent with current geotechnical engineering practice. In addition, basic requirements for providing adequate underpinning and excavations have been added.

2015 CODE: 1803.5.6 Rock Strata. Where subsurface explorations at the project site indicate variations ~~or doubtful~~ characteristics in the structure of the rock upon which foundations are to be constructed, a sufficient number of borings shall be drilled to sufficient depths to assess the competency of the rock made to a depth of not less than 10 feet (3048 mm) below the level of the foundations to provide assurance of the soundness of the foundation bed and its load-bearing capacity.

1803.5.7 Excavation Near Foundations. Where excavation will ~~reduce~~ remove lateral support from any foundation, an investigation shall be conducted to assess the potential consequences ~~and address mitigation measures.~~ a registered design professional shall prepare an assessment of the structure as determined from examination of the structure, the review of available design documents and, if necessary, the excavation of test pits. The registered design professional shall determine the requirements for underpinning and protection and prepare site-specific plans, details and sequence of work for submission. Such support may be provided by underpinning, sheeting and bracing, or by other means acceptable to the building official.



Photo Courtesy of Crux Subsurface, Inc.

Geotechnical investigation

CHANGE SIGNIFICANCE: The past wording of Section 1803.5.6 suggested that it would be possible to provide “assurance of the soundness of rock” during the geotechnical evaluation phase, which may not necessarily be the case. Unfortunately, experience has shown that even at sites where rigorous evaluation of rock conditions is undertaken, it is often determined during construction that rock conditions between the locations sampled can vary significantly. Often the actual rock conditions at foundation locations are exposed or better defined (through excavation, proof-drilling, etc.) during construction, and interpretations of the conditions exposed during the construction process are necessary to complete the design of the foundation system. The modifications to Section 1803.5.6 express the characteristics necessary to assess the rock strata and estimate a load-bearing capacity based on observations and testing. Modifications to Section 1803.5.7 provide specific guidelines to identify responsibilities and basic requirements for providing safe and adequate underpinning and excavations. New Section 1804.2 was also added to provide specific requirements when underpinning is chosen to provide support for adjacent structures.

This excerpt is from the Significant Changes to the International Building Code, authored by John Henry, PE, Jay Woodward and Doug Thornburg, AIA. The book is available at shop.iccsafe.org. Use ID # 4000S12.



THE COMPLETE SOFTWARE FOR ANCHORING TO CONCRETE



Mechanical



Adhesives



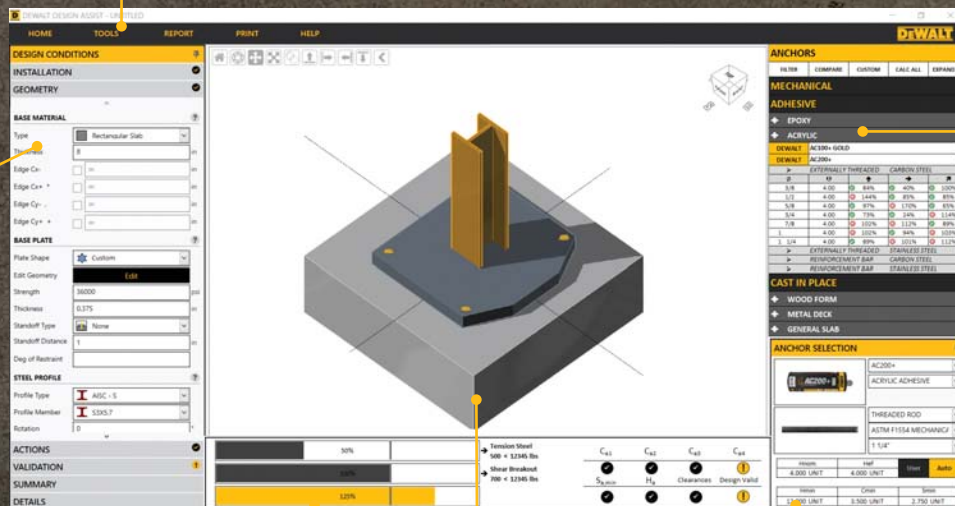
Cast-in Place

Tool Bar

- New, Save, Open
- Report Generation
- Application Help

Design Conditions

- Installation Properties
- Geometric Constraints
- Loading Attributes
- Validations
- Calculation Summary
- Project Details



Result Area

- Easy to Read Bar Graphs
- Continuous Results updating
- Key Geometric Checks

Visual Model

- 3D Graphics
- Edit Geometry
- Zoom, Pan, Rotate

Active Anchor

- Auto Embedment Optimization
- Key Anchor Properties
- Fast Switching

Anchor Tree

- Filtering
- Comparisons
- Calculate All
- Documents
- Custom Anchor

DESIGN



Code compliant anchor designs according to ACI 318-14 and CSA A23.3-14

DOCUMENT



Comprehensive design calculations with multiple reporting options

ANCHOR



Includes full catalog of DeWALT innovative anchors, standard Cast-in Place and MORE!!