



MNSEA

Minnesota Structural Engineers Association

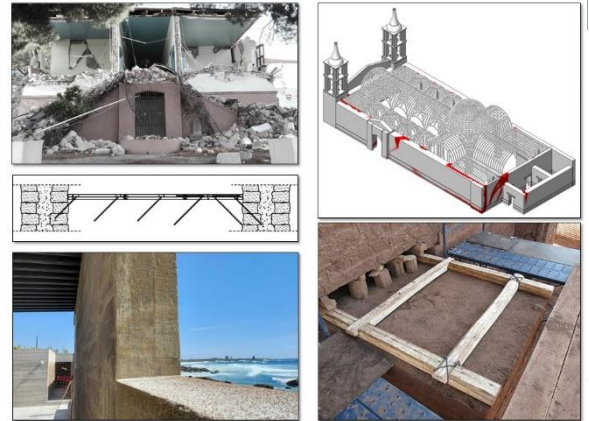
SEMINAR AND TRADE SHOW – MAY 9, 2023

Existing Structures

SESSION 1 – Preservation of Historic Structures: Methodology, Safety Assessment and Practice

Paulo B. Lourenço, Professor of Structural Engineering – University of Minho, Guimarães, Portugal

European countries have developed throughout the years a valuable experience and knowledge in the field of preservation of existing structures and built cultural heritage, leading to impressive developments in the areas of inspection, non-destructive testing, monitoring and structural analysis of historical constructions. These developments, and the recent guidelines for future reuse and conservation projects allow for safer, economical and more adequate remedial measures. Often engineering advice seems to be regarded as something to be sought at the end of a project when all the decisions have been made, while it is clear that better solutions might have been available with an earlier engineering contribution. Preservation engineering also requires a different approach and different skills from those employed in designing new construction. In fact, modern codes were written with different forms of construction in mind, and can be very destructive for the existing buildings fabric. The presentation will address aspects related to disasters and risk, discussing the methodology to be adopted, safety assessment and presenting examples of case study applications to different buildings.



SESSION 2 – Diagnostic Procedures for Understanding Existing Construction

Michael Schuller P.E. FTMS FAPT – Atkinson-Noland & Associates

Engineering analysis of existing structures begins with having a well-founded understanding of as-built construction and existing conditions. Many different methods are available for diagnosing conditions, ranging from use of simple hand tools to specialized approaches requiring expensive equipment and years of experience. Nondestructive evaluation (NDE) techniques will be discussed as alternatives to destructive probe openings for evaluating subsurface hidden conditions without damage to existing materials. In situ test methods will also be presented and, while not truly nondestructive, these techniques allow gathering essential information on conditions and material properties with minor disruption to existing fabric. We will discuss general applications of several methodologies and equipment including pros and cons of each, setting up an evaluation program, calibration approaches to ensure methods provide useful data, and what to expect from a building diagnostic report.



SESSION 3 – Panel of Local Experts

Natascha Wiener, NCARB – Historical Architect with the State Historic Preservation Office

Robert Seavey, Ph.D. – Wood Products & Building Science Consultant

Jim Brusso, Ph.D., P.E. – Engel Metallurgical Ltd.

Ryan T. Drury, P.E. – Braun Intertec

You don't want to miss this panel discussion among local experts. They will provide an introduction into their specialized work and how their expertise can bring value to existing building projects. Bring your questions for the open discussion portion of this session. How can we improve collaboration, elevate the level of our structural engineering practice, and better serve our clients and communities in these multi-disciplinary projects?



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AGENDA:

11:30 a.m. Registration, Lunch & Trade Show	2:30 p.m. Session 2
12:00 p.m. MNSEA General Meeting	3:30 p.m. Break, Snack & Trade Show
12:40 p.m. Trade Show Vendor Introductions	4:00 p.m. Session 3
1:00 p.m. Session 1	5:00 p.m. Closing
2:00 p.m. Break & Trade Show	5:00 p.m. Happy Hour & Trade Show

LOCATION:

[Marriott Minneapolis West](#) – 9960 Wayzata Blvd, Minnetonka, MN 55426

Wendy Ortendahl: wortendahl@csmcorp.net or 952-367-5073

COST:

MNSEA or SEAWI members	\$110	MNSEA/SEAWI Young Members (35 and under)	\$70
General Attendees (non-members)	\$160	Students	\$40
Includes General Meeting, Educational Sessions, Trade Show Access, Lunch, Snack Breaks, and Happy Hour Drink Ticket			

REGISTRATION:

Online Registration Link: <https://business.acecmn.org/events/details/2023-mnsea-seminar-trade-show-1649>

Registration Refund – 48 hours minimum cancellation required

CONTINUING EDUCATION:

The seminar will provide 3.0 PDH/0.3 CEU credits. Certificates will be distributed at the end of the seminar.

SPONSORSHIPS:

This year we are offering a new opportunity for Special Sponsorships! THANK YOU TO OUR SPONSORS!

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TRADE SHOW:

A trade show with 20+ vendors from across industry will occur on breaks between educational sessions and during the happy hour following the sessions. Vendors will provide updates to attendees on their products and services. Vendors are excited to answer questions and provide solutions to every-day engineering challenges.

List of Currently Registered Vendors:

- | | | |
|------------------------------|--------------------------------|---------------------------------|
| • Vulcraft | • Cemstone Companies | • Wells |
| • CRSI | • Martinez Geospatial | • Lindapter International |
| • Advant Steel | • Subsurface Constructors | • Euclid Chemical |
| • Peikko | • American Masonry Restoration | • Simpson Strong Tie |
| • Terracon | • Vertical Access | • New Millennium |
| • DeWalt Anchors & Fasteners | • Prosoco | • Vector Corrosion Technologies |
| • Molin Concrete Products | • Menard USA | • Cast Connex |
| • MiTek | • FORSE Consulting | • Hilti |
| • CLP-Systems | • Stonfab | |

If you have any questions about this seminar, please contact Elizabeth Manning at 612-758-4251 or emanning@hga.com



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Paulo B. Lourenço, Professor of Structural Engineering – University of Minho, Guimarães, Portugal

Professor at the Department of Civil Engineering, University of Minho, Guimarães, Portugal. Experienced in non-destructive testing, advanced experimental and numerical techniques, innovative repair and strengthening techniques, and earthquake engineering. Specialist in structural conservation and forensic engineering, with work on more than 100 monuments and existing buildings, including 17 UNESCO World Heritage sites. He is also a structural masonry expert, responsible for R&D projects with the clay brick, concrete block and lightweight concrete block masonry and mortar industry. Consultant on innovative masonry structures using confined and reinforced masonry, and on masonry infills. He led the revision of Part 1 of the European code for masonry (EN 1996-1-1). Coordinator of the MSc on Structural Analysis of Monuments and Historical Constructions (SAHC) since 2007, with 400 alumni from 75 countries. Author of “Historic Construction and Conservation” and “Finite Element Analysis for Building Assessment”, Routledge (2019 and 2022). Supervised more than 60 PhD theses and coordinated multiple national and international research projects.



Michael Schuller P.E. FTMS FAPT – Atkinson-Noland & Associates



Michael Schuller is president of Atkinson-Noland & Associates, a consulting engineering firm specializing in evaluation and repair of existing structures. He has 30 years' experience with masonry engineering including special expertise with nondestructive evaluation and repair procedures. He has over 100 publications on concrete and masonry including a new book titled “Assessment and Retrofit of Masonry Structures,” and taught masonry structural design at the University of Colorado from 1999 through 2009 and in 2016. Mr. Schuller serves on the Board of Directors of The Rocky Mountain Masonry Institute and is a Fellow of The Masonry Society and the Association for Preservation Technology.

Natascha Wiener, NCARB, Historical Architect – State Historic Preservation Office

Natascha Wiener is an historical architect at the Minnesota State Historic Preservation Office, where she is the state coordinator for the federal and state Historical Rehabilitation Tax Credit programs and a content expert for other Historic Preservation Act programs. Specializing in historic Rehabilitation, building reuse and interpretation of the Secretary of the Interior's Standards for the Treatment of Historic Properties, she serves on both the Power & Building, and Resilience & Adaptation Action Teams under the Governor's Climate Change Subcabinet, which recently released the Minnesota's Climate Change Framework. Natascha also serves as a Western Great Lakes Chapter Board member of the Association of Preservation Technology International. She is a registered architect and has a Masters of Architecture from the University of Minnesota.



Robert Seavey, Ph.D. – Wood Products & Building Science Consultant



Bob Seavey is a retired Teaching Professor from the University of Minnesota. During his 30+ years teaching, he has taught classes in wood moisture relations, wood composites, wood anatomy, statics and structures (for Construction Management students), as well as classes in building science, building diagnostics and sustainable housing. He is author of the textbook: Sustainable Housing: A Systems-Based Approach. At the University of Minnesota, he also participated in several material testing projects related to wood products. For the past 32 years, he has been a consultant for service-related questions about wood and composite products, as well as building diagnostics. Most frequently he is asked to identify wood species for clients in structural engineering and historical building preservation.

Jim Brusso, Ph.D., P.E. – Engel Metallurgical Ltd.

Jim Brusso is a metallurgical engineer at Engel Metallurgical Ltd. in Sauk Rapids, Minnesota. He earned his B.S., M.S., and Ph.D. degrees in Metallurgical Engineering from Michigan Technological University. He is a licensed professional engineer in Minnesota. Prior to joining Engel Metallurgical, Jim worked in R&D and metallurgical quality assurance at The Timken Company, specializing in steel product development, process development/improvement, and metallurgical quality. Jim currently provides materials engineering consulting to the manufacturing, construction, insurance, and legal industries. He also oversees the materials testing performed within Engel Metallurgical's ISO 17025 accredited in-house laboratory and serves as the technical manager and quality manager for the company. Jim has experience with several industry welding specifications. He has provided materials engineering support for assisting in the development of weld procedure specifications, as well as overseeing the testing for qualifying weld procedures and welders. He has also provided materials support for identifying the materials of construction, determining their mechanical properties, and for assessing the weldability of historic materials encountered during renovation/remodeling of existing historic structures.



Ryan T. Drury, P.E. – Braun Intertec



Ryan Drury, PE graduated from the University of Minnesota in civil engineering with a construction management minor and is currently a Professional Geotechnical Engineer at Braun Intertec, specializing in deep foundations. Ryan has 15 years of experience working on geotechnical solutions across the country. For the past 10 years, he has focused on the design, testing and quality control of driven pile, drilled shafts, auger-cast pile, micropile, and other deep foundation elements. Specializing in deep foundations means that he must decipher and adapt to each site's unique design and construction constraints ranging from high structural loading to poor soils or a combination of both. Ryan works closely with the project team to develop the appropriate geotechnical solutions across a wide variety of market sectors and geographies.