

**CHSA Biennial Meeting, co-hosted by AIA Minnesota
November 12-14, 2014
Minneapolis, Minnesota**

**Legacy Design and Detail (A 3-part program)
Wednesday, November 12, 9:30 am – 11:00 am**

1.5 HSW LU Hours

Part 1: Judith Chaffee: Massive Material

Judith Chafee, FAIA, (1932-98) practiced architecture for thirty years. This presentation will provide a close reading of the roots and physical manifestations of her bond with vernacular building culture from childhood experiences in Tucson, through formal education at Bennington and Yale and into architectural practice in Southwestern United States. Chafee's work with Edward Larrabee Barnes, Walter Gropius, Paul Rudolph and Eero Saarinen deepened her connection to regionally informed building strategies and provided a way of working that allowed for the definition of an endemic culture of building rooted to a unique place in the world.

Presenter: **Christopher Domin** is an architect, educator, and international lecturer on regional critical practice. His teaching is focused on regional modernism and material technologies. He is the co-author of Paul Rudolph: The Florida Houses and is currently writing a monograph of Desert Modernist, Judith Davidson Chafee with Kathryn McGuire.

Part 2: Built, Unbuilt, Rebuilt: MoMA's Marcel Breuer Exhibition House

Marcel Breuer's design for the Museum of Modern Art's inaugural exhibition of a series called "The House in the Museum Garden" was on exhibit for six months in 1949. Tens of thousands of guests came to see this "... custombuilt, architect-designed solution for a middle-income family." But rather than the end of the exhibition meaning the end of the original structure, it was only the beginning. The house was partly dismantled and moved 30 miles north where it was reassembled on the historic estate of the Rockefeller family. This presentation investigates the unusual circumstances of this house's original construction, partial disassembly, reassembly, and current restoration.

Presenter: **Margaret Oldfather** is the preservation operations associate at The Pocantico Center. Her work there focuses on preserving and maintaining the building and landscape resources of this historic area. Oldfather's thesis, while in graduate school at Columbia, examined the marriage of historic preservation with sustainable building practices. She incorporates her interest in sustainability into her work at the Pocantico Center where the staff strives to operate the buildings and grounds in an environmentally conscious manner.

Part 3: The Rise of the Exterior Bearing Wall

In the 1950s and 1960s, tall buildings in the United States underwent a significant structural transformation including the emergence of the exterior bearing wall, or "tube" skyscrapers. Much of this innovation has been attributed to the firm Skidmore, Owings and Merrill and the brilliant engineer Fazlur Khan. This presentation describes an alternate sequence of development through the work of the Seattle-based engineering firm of Worthington Skilling Helle and Jackson. Arising from the ingenuity of engineers in Seattle, yet extending across the country, it provides deeper insight into the design innovations that contributed to the emergence of this distinct building form.

Presenter: **Tyler S. Sprague, PE, PhD**, is an Assistant Professor in the Department of Architecture at the University of Washington. Sprague has degrees in engineering from UC Berkeley and the University of Washington (UW), and worked professionally as a structural engineer before earning a PhD in architectural history from the College of Built Environments at the UW.

**Leadership and Remembrance (A 3-part program)
Wednesday, November 12, 1:00 pm – 2:30 pm**

1.5 LU Hours

Part 1: Leadership Principles in the Design and Construction of the Empire State Building

Built in 1931, the Empire State Building is still an American icon today. As impressive as the building is today, the speed of the design and construction of the building eighty years ago is even more captivating.

The methods used to design and construct this icon exhibited excellent leadership by the owners, architects, and constructors. Not only was this massive project constructed in record time, it was also completed under budget. This presentation will display the modern leadership principles that were applied by the designers and builders of the Empire State Building.

Presenters: **Anthony Perrenoud, PhD**, is an Assistant Professor at the University of Oklahoma in the Construction Science Division of the College of Architecture. His teaching and research interests are in the area of preconstruction services, risk management, MEP systems, and leadership.

Kenneth F. Robson, AIC, CPC, is professor and director of the Haskell & Irene Lemon Construction Science Division at the University of Oklahoma. He is currently the holder of the Haskell & Irene Lemon Chair in Construction Science Leadership at the University of Oklahoma. He was the AGC of America Education and Research Foundation's 2011 Outstanding Educator.

Part 2: Contractor's Pride and Duty: OKC National Memorial Construction

The Oklahoma City National Memorial is an award winning, outdoor, symbolic memorial tribute to the victims, survivors and rescue workers involved in this tragedy. Participation in projects built under these circumstances typically invokes a sense of pride and fulfillment of duty not experienced in a typical construction project. Interviews with Lippert Brothers Inc. personnel, 14 years after completion of the memorial, are used to highlight, from the contractor's perspective, how pride and duty influenced the construction of the \$8.8 million memorial. Additionally, the program will compare this project to a typical construction project in the areas of bidding, the owner-architect-contractor relationship and collaboration, dealing with construction elements, and construction worker field productivity.

Presenter: **Richard C. Ryan** obtained a Building Construction BS degree in 1975 and a Construction Management MS degree in 1990 from Texas A&M University. He is currently the CNS Board of Visitors Professor in the Haskell & Irene Construction Science Division and the College of Architecture Associate Dean for Administration at the University of Oklahoma.

Part 3: A Japanese Internment Camp Historical Reconstruction Project

This presentation will describe a unique service-learning project undertaken by Boise State University that involved the design and reconstruction of the historic guard tower at the National Park Service Minidoka National Historic Site. The session will discuss techniques used to unite a diverse group of stakeholders, with various interests and backgrounds, to achieve a common goal. The use of mobile technologies used during the project will also be discussed. The lessons learned during this project have value for anyone involved in projects requiring communication among a diverse group of people with varying levels of knowledge about the construction process.

Presenters: **Casey Cline, PhD**, is an associate professor in the Construction Management Department within the College of Engineering at Boise State University. His education and research interests are focused on Service-Learning and Community Engagement. He has over 25 years of construction industry experience including work in commercial, industrial, petrochemical, light commercial, and residential construction.

Rebecca Mirsky, PhD, PE, is an associate professor in the Department of Construction Management at Boise State University. She has over twenty years of experience in the construction industry as an environmental engineer, and is especially interested in high performance of green construction methods and materials.

Engineering and Design Legacy (A 2-part program)

Wednesday, November 12, 2:45 pm – 4:00 pm

1.25 LU Hours

Part 1: Ambitions of a Civil Engineer: E. L. Corthell

The New York Times obituary from May 16, 1916 noted that E.L. Corthell controlled as much as \$180,000,000 worth of work during his lifetime. This begins to reflect on Corthell's contributions and his efforts to shape the civil engineering practice. Corthell worked diligently to establish a School of Architecture and Engineering at the University of Chicago. In addition, he began devising an International Institute of Engineers and Architects to bring together professionals. Corthell was ultimately unsuccessful

in these two endeavors, though both will be examined to understand his aspirations, contributions, and the positioning of the profession at this time.

Presenter: **Marci S. Uihlein, PE**, is a licensed professional engineer with a graduate degree in architecture. She has worked on projects for both the private sector and academic institutions with Arup at their San Francisco and Los Angeles offices. She is an Assistant Professor at the University of Illinois at Urbana-Champaign, teaching classes in building structures for architecture students. Her research areas include the integration of structure in architectural projects, the structural engineering profession (contemporary and historical), and examining the professional relationship between architects and engineers.

Part 2: Recognizing the Importance of Ventilation — History and Examples

The inclusion of engineered ventilation systems in the built environment is not a recent development. The importance of ventilation in schools for student performance was recognized and studied during the 1800's. Early systems delivered fresh air through various means, with the introduction of power-driven centrifugal fans playing a pivotal role. Attend this program to compare various means for delivering fresh air in historical construction. Learn about the historic public school buildings of Chatfield, Minnesota (from 1880, 1916 and 1936) along with other early 20th century examples from the upper Midwest.

Presenter: **Steve Harmon, PE**, works with Dunham Associates in Rochester, MN designing HVAC and related mechanical systems for healthcare, education, commercial and preservation projects. He is also an Associate with Pathfinder CRM of Spring Grove, MN as a Preservation Engineer specializing in historic systems and equipment.

Living with Platteville Limestone — Assessment & Repair

Thursday, November 13, 9:30 am – 10:45 am

1.25 HSW LU Hours

Residents of the Twin Cities live in a geologic and architectural environment featuring Platteville Limestone, which was used for a variety of architectural applications beginning in the mid to late 1800's, when Minneapolis and St. Paul were growing rapidly. Problems with the material when exposed to moisture resulted in its eventual discontinuation as a primary building material. Nevertheless, a significant amount of historic limestone buildings remain and the necessity for monitoring, maintenance, and repair confronts building owners and architects who must live with Platteville Limestone. The presentation will examine the geologic and architectural history, common distress mechanisms, and repair options for Platteville Limestone masonry. Finally, a case study of the Pillsbury A-Mill will be presented to demonstrate these concepts in practice.

Presenters: **Edward Gerns** works in the WJE Chicago office, with extensive experience in stone masonry facades. His expertise includes exterior wall evaluation and restoration for buildings ranging from churches to high rise structures.

Chelsea Karrels, Assoc. AIA, of WJE Minneapolis has worked on a variety of projects involving the investigation and design repair of distressed materials and assemblies in both contemporary and historic structures.

Paul Whitenack, AIA, works in the WJE Minneapolis office and specializes in the evaluation and repair of building enclosure systems, with many of his past projects involving historic structures and adaptive reuse projects. His restoration projects have involved terra cotta, brick and stone masonry and their underlying support systems; wood and steel sash windows; copper roofing; cast iron structural elements; and exterior woodwork.

Basilica Landmark – A Preservation Case Study

Thursday, November 13, 11:00 am – 12:15 pm

1.25 HSW LU Hours

Historic places of worship are often some of the most beautiful and significant buildings in our built environment; however, they often present difficult preservation issues. This presentation focuses on the case study of the Basilica of Saint Mary in Minneapolis. Built 1907–1915, this Beaux Arts church has served the needs of its congregation; and as congregational needs changed, new spaces were completed.

Structural and envelope issues developed over time. Attend this program to hear how this church developed a process to track the building planning not only for ongoing maintenance but also cost estimating for preservation and rehabilitation issues for the next ten years and beyond. Hear how the establishment of the Basilica Landmark is enabling the buildings to be preserved and renewed.

Presenters: **Peter Crain** is the contractor for the Basilica Landmark. Crain is president of C3 Construction Services, a home renovation and custom home building company. He majored in Art Education and studied architecture at the University of Minnesota. This strengthened his natural talent for construction and design and C3 Construction provides Crain with the opportunity to capitalize on his aesthetic strengths and education.

Carol Frenning is a liturgical design consultant who works with congregations throughout the country as they build or renovate their worship spaces. Trained as an art historian, her academic work is in the area of American religious architecture. She has taught at the University of Saint Thomas and lectures at the U of M School of Architecture. Frenning has served on numerous boards including the national advisory board for IFRAA-AIA (Interfaith Forum on Religion Art and Architecture) in 2005.

Chuck Liddy, FAIA, has been a Principal with Miller Dunwiddie Architecture since 1992. His extensive background in preservation includes over 200 projects and has resulted in multiple awards and consistent recognition including the AIA Minneapolis/Heritage Preservation Commission Steve Murray Award for Career Achievement, St. Paul Heritage Preservation Commission, and the Preservation Alliance of Minnesota.

Kelley Mastin, AIA, Miller Dunwiddie Architecture has over 13 years of experience with preservation, worship and public projects. She currently serves on the Special Events Planning Committee for the Preservation Alliance of Minnesota.

Engineering History (A 3-part program)

Thursday, November 13, 2:30 pm – 4:00 pm

1.5 HSW LU Hours

Part 1: How to Float a Wall on Mud: Building New York City's Bulkhead

Beginning in 1873, in order to improve and promote shipping and commerce, the City of New York's Department of Docks transformed the waterfront that surrounded the island of Manhattan by constructing a permanent bulkhead to retain the earth for a marginal street. This pile-supported granite and concrete riverwall floating on mud was expensive, controversial, and difficult to construct. The bulkhead is still intact today and functioning as designed. Attend this program and explore early uses of cement as a building product in the United States and discover potential failure modes of early underwater concrete construction.

Presenter: **Zach Rice** is an architect based in New York City who specializes in the conservation, restoration, and rehabilitation of heritage structures such as churches, rowhouses, industrial sites, and ruins. He holds degrees in architecture from Clemson University and in historic preservation from Columbia University.

Part 2: Building Harvard Stadium: Early Concrete Construction

In 1903 the Harvard University Athletic Association began constructing a large, fire-resistant viewing structure to replace their wooden football grandstands. Harvard's design engineers decided to build their stadium out of reinforced concrete, a new and largely experimental material. During construction, the engineers and contractor had to develop their construction methods from scratch and adapt their techniques as work progressed. Because use of reinforced concrete was so new, the various stages were well documented in engineering journals and newspapers. Attend this program for a fascinating look at the early development of reinforced concrete construction in the United States.

Presenter: **Alicia Svenson, AIA**, is a Senior Architectural Conservator in the New England office of Building Conservation Associates, Inc. Her work focuses on restoration repairs for a wide range of structures, preservation planning, and preservation design. She is a graduate of Brown University and received an M. Arch. from the University of Wisconsin-Milwaukee.

Part 3: David Steinman — Design and Construction of the Mackinac Bridge

This session will focus on the design and construction of the Mackinac Bridge, in the context of the research and lessons learned from David Steinman's design of prior bridges. At least two of Steinman's bridges had issues with wind-induced oscillations: Thousand Islands Bridge (1937), and Deer Isle Bridge (1939). Steinman successfully designed retrofits for these bridges to reduce or eliminate the oscillations. After the collapse of the Tacoma Bridge, Steinman devoted the next 17 years of his career to researching the issue of aerodynamic stability. Attend this program and understand the issue of wind-induced oscillations on long span suspension bridges and see how Steinman's research influenced the design strategies employed in the Mackinac Bridge.

Presenter: **Robert J. Dermody, AIA**, is an associate professor in the School of Architecture, Art and Historic Preservation at Roger Williams University in Bristol, RI. His education and background bridges the realms of architecture and engineering. His primary interest is in teaching structures to architecture students. Dermody also has a keen interest in bridges. He has traveled extensively to photograph the bridges of Robert Maillart in Switzerland, and the early iron bridges of the industrial revolution in Wales.

96 Years and Counting. . . A History of the Associated General Contractors

Thursday, November 13, 4:15 pm – 5:30 pm

1.25 LU Hours

We take general contractors for granted, but the Association was only formed in 1918 in the LaSalle Hotel in Chicago with a number of local contractors present. This presentation will track the events leading up to the formation and the subsequent activities of the Associated General Contractors (AGC), especially its relationship with the AIA. Some thoughts will be expressed on what the future may hold for both organizations. The session will be followed with a panel of local contracting companies with history behind them who will discuss the reasons for their longevity and their future plans.

Presenters: **Brian Bowen** formed the Construction History Society of America in 2007 with help from Georgia Tech. He currently chairs its Management Committee. His particular research interests cover the evolution of the American construction industry and the factors that have contributed to change over its history. Bowen also teaches continuing education for Georgia Tech College of Architecture including courses on Construction Industry – It's Past, Present & Future. Bowen retired as president of Hanscomb Inc. in 2000 after serving for 40 years with the company in England, Canada, and the United States.

Jane Sanem has been with the Associated General Contractors of Minnesota for the past 11 years but has been involved in the Minnesota construction industry for almost 40 years. Beginning as a junior high teacher, she moved to *Construction Bulletin* magazine, "the Bible of the Construction Industry". At *Construction Bulletin*, she was circulation manager, associate publisher, and advertising sales.

Mid-Century Modern (A 3-part program)

Friday, November 14, 8:30 am – 10:00 am

1.5 HSW LU Hours

Part 1: Sculpture on a Grand Scale: The Structural Geometry of Jack Christiansen's Thin Shells

This presentation explores the work of one of the most significant, yet often overlooked, thin shell designers of the 20th century, John V. "Jack" Christiansen. Despite designing the largest free-standing concrete dome ever built (the Seattle Kingdome), Christiansen's accomplishments have been only partially explored, leaving a large number of innovative thin shell structures unexamined and under-appreciated. This presentation will show how Christiansen's creative work was both geometrically expressive and structurally ambitious, becoming, in his own words, "sculpture on a grand scale."

Presenter: **Tyler S. Sprague, PE, PhD**, is an Assistant Professor in the Department of Architecture at the University of Washington. Sprague has degrees in engineering from UC Berkeley and the University of Washington (UW), and worked professionally as a structural engineer before earning a Ph.D. in architectural history from the College of Built Environments at the UW.

Part 2: Prestressed Suburbia: A New Material in Postwar Minnesota

Postwar suburbs needed infrastructure. Newly introduced prestressed concrete beams, panels, and planks proved stronger, longer, and lighter than their reinforced-concrete counterparts, and benefited from off-site,

assembly-line manufacturing under controlled factory conditions. Following a 1952 University of Minnesota Concrete Conference, new local firms built casting yards to manufacture prestressed-concrete components. I-section beams became bridges, while double-tees and machine-extruded, hollow-core planks named Spancrete and Flexicore created building roofs and parking ramp floors. Attend this program and hear about the technology transfer of prestressed-concrete production and use for the first national projects to the initial development and use in Minnesota.

Presenter: **Bob Frame, PhD**, is a senior historian and engineering historian with the Minneapolis office of Mead & Hunt, Inc., a national engineering firm. He specializes in collaborative projects with engineers to rehabilitate historic bridges. He co-authored a chapter on historian-engineer collaboration in *Historic Bridges: Evaluation, Preservation, and Management* (2008). He also works with the survey and evaluation of historic bridges and has conducted statewide bridge surveys in many states, including Minnesota, Indiana, Texas, and Louisiana.

Part 3: Defining Modern in Post-War Amarillo: The Schell-Munday Company, Synthetic Living, and the 1947 Perma-Stone Protest

Artificial stone, like Perma-Stone, transformed façades across America from the 1930s to the 1950s. It was a low-cost option to middle-class Americans seeking to beautify and modernize their homes or businesses. But in 1947, local bricklayers and tile setters in Amarillo staged a picket line at the Tri-State Fairgrounds, outraged at the application of artificial masonry to fair buildings. The clash between tradesmen and the Schell-Munday Company, the region's exclusive Perma-Stone dealer, brought conflicting ideas about tradition and innovation, authenticity and economy to a head. Attend this program and explore what consumers and craftsmen did to define what it meant to be "modern" in post-war America.

Presenter: **Marisa Gomez** is a native of the Twin Cities. She earned a BFA in architectural history from the Savannah College of Art and Design in 2007, and a master's in architectural history from the University of Texas at Austin in 2014. Her research questions how vernacular builders use both forms and materials to foster a sense of community, express aspirations, or connote hierarchies. Gomez is currently a PhD candidate in Art History at the University of Wisconsin Madison.

Tours

An Architect's Stories from the Mill City Museum Construction

Walking tour guided by **John Stark, AIA**, Project Architect, BKV Group

The Washburn Crosby Mill was the largest flour mill in the world when it was built. Shut down in 1964, it was ravaged by a fire in 1989 and left in ruins. The Minnesota Historical Society (MHS) was able to stop the fire fighters from using their hoses to knock down the remainder of the building walls. The City of Minneapolis stabilized the building, and for almost 10 years it sat empty awaiting redevelopment. In 1998, a visionary developer teamed up with MHS and began architectural designs. Numerous discoveries and stories took place as history was uncovered, and the museum and tenant spaces above took shape. Stories of these discoveries and how the building affected the design will be told as you walk the public spaces in what is now Mill City Museum. Following the tour, discount tickets will be made available to see the Museum.

This tour walks the equivalent of about 1 city block, and goes up and down four stories (an elevator is available).

Tour of the Seventh Avenue Helicoidal Bridge

A walking tour guided by **Benjamin Ibarra-Sevilla**, Assistant Professor of Architecture at the University of Texas at Austin

The Seventh Street Improvement Arches are a double-arched masonry highway bridge that formerly spanned the St. Paul and Duluth Railroad tracks in St. Paul, Minnesota. The Seventh Street Improvement Arches are historically significant for its rarity and the technically demanding nature of its skewed, helicoidal spiral, stone-arch design. The bridge is one of the few of its type in the United States, and is the only known bridge of its type in Minnesota. It was built in 1883-1884 by Michael O'Brien and McArthur Brothers of Chicago and was designed by William A. Truesdell. The bridge was listed on the National Register of Historic Places in 1989 and on the American Society of Civil Engineers Historic Civil Engineering Landmarks in 2000.

Minnesota State Capitol Tour

Friday, November 14, 2:30 – 5:00pm

Sponsored by JE Dunn Construction.

Limited to the first 70 registrants.

Care to channel Cass Gilbert? If so, end your Convention week and join us for a tour of the State Capitol now under re-construction. Hosted by JE Dunn Construction, this tour will illuminate stories of the reconstruction effort, discoveries about how the capitol was constructed, and ways being taken to preserve the legacy of the design, its architect, and the value and functionality of the structure to Minnesota over its nearly 100 year history. Bus departs the Convention Center at 2:30; returns by 5:00 (depending on traffic).

Reception

Friday, November 14, 5:30 pm – 7:30 pm

Reception at the Minneapolis Club – 729 2nd Ave S, Minneapolis, MN 55402

Please join us for the concluding event of the 2014 Biennial Meeting of the Construction History Society of America. Solidify your new relationships, say goodbye to old friends, and enjoy a drink before dinner out on the town. Cash bar and light appetizers provided. Business casual attire. Parking provided in the Minneapolis Club Parking Ramp on 8th St. South.