TOPIC: Ethics – Case Study
Developed by ASHRAE TC 1.07 (Business, Management & General Legal Education), this interactive session has participants break into small groups and discuss ethics cases that have been adjudicated by the NSPE (or by State Boards). Due to the interactive nature of this seminar, you will have the opportunity to engage in spirited debate in a small group setting, present “your findings,” not just listen to the presenter talk about ethics.

Three to four cases will be presented, along with the final outcome. Real cases are used because they have generally reached an official conclusion that has been published, along with the reasoning behind the outcome. You’ll discover that there are nuances and also surprises as you consider responsibilities and ethics.

Recommended audience: Anybody in the construction industry: Project managers, consulting engineers, contractors, facilities managers and students.

TOPIC: Upgrading Existing Chilled Water Systems
Existing chilled water systems provide the capability to cool buildings efficiently. Yet there are often ways that these existing systems can be upgraded and improved to increase efficiency, better serve building occupants and use existing infrastructure to keep projects cost effective.

This presentation:
- Discusses chiller retrofits and replacement
- Explores different design parameters (flow rates and temperatures) and the opportunities they offer - existing systems
- Examines use of variable flow in existing systems
- Considers controls to optimize and reduce system energy use

Presenter: Mick Schwedler, PE, FASHRAE, LEED AP
Trane – Applications Engineer
Mick has been involved in the development and support of HVAC systems for Trane since 1982. As an applications engineer his areas of expertise include system optimization (in which he holds patents) and chilled water and water source heat pump system design. His primary activities include assisting designers in proper application of Trane products and systems in buildings, and writing system application manuals and newsletters. In addition, he has presented technical information to tens of thousands of engineers through Trane’s Engineers Newsletter Live series, and ASHRAE webcasts. Mick has given technical seminars throughout North America, as well as in the Far East and South America, and published a number of articles within the industry. Prior to his work with Trane, Mick received his MSME from the University of Wisconsin Solar Energy Laboratory and BSME from Northwestern University.

Mick serves as a Treasurer on the ASHRAE Board of Directors and is also an ASHRAE Fellow, recipient of ASHRAE’s Exceptional Service, Distinguished Service, and Standards Achievement Awards, was Chair of SSPC 90.1-2010 and the Advanced Energy Design Guide Steering Committee. Mick has served on multiple USGBC technical and education groups and chaired the LEED Technical Committee. He also authored portions of the ASHRAE GreenGuide and served on technical groups for the New Buildings Institute.

TOPIC: A Transcendental Journey – Museum of the Bible
The Museum of the Bible is devoted to research of biblical content, history, and impact on culture. The 400,000 square foot building repurposes a 1920’s warehouse with exhibits, a two-story glass roof addition, six-story atrium, theater, restaurant, and ballroom. The design solution hinges on light to guide a guest experience of individual discovery, ranging from leisure to scholarly investigation. Encouraging movement, reflection, and curiosity, the lighting quality speaks to this transcendental journey by staff, faculty, and visitors.

The design team was challenged to balance the use of art, architecture, and technology to evoke moments that are intentionally subdued and others that spike the sensory experience. The quality of lighting and integration with technology and materiality challenges the notion that museum public space remain neutral to exhibit space and instead blurs those boundaries.

The presentation will showcase the integrated design processes, technical challenges, and solutions of the multiple experiential lighting installations. The discussion will exemplify improvement of solar analysis from conventional to parametric tools to leverage the efficiency of real-time workflow in comparison to early iterative studies.

Presenter: Rodrigo Manriquez
SmithGroup – Lighting Design Studio Leader
Mr. Manriquez conceptualizes lighting solutions as an integral component of the design process by understanding the critical role that lighting design plays in the way architecture evokes emotions. In response, he strives to raise awareness about the integration of lighting design to clarify how perceive architectural environments. Manriquez’s approach to lighting leverages data-informed design thinking to creatively position architecture, and technology to evoke moments that are transcendent.

The design team was challenged to balance the use of art, architecture, and technology to evoke moments that are intentionally subdued and others that spike the sensory experience. The quality of lighting and integration with technology and materiality challenges the notion that museum public space remain neutral to exhibit space and instead blurs those boundaries.

The presentation will showcase the integrated design processes, technical challenges, and solutions of the multiple experiential lighting installations. The discussion will exemplify improvement of solar analysis from conventional to parametric tools to leverage the efficiency of real-time workflow in comparison to early iterative studies.

Presenter: Rodrigo Manriquez
SmithGroup – Lighting Design Studio Leader
Mr. Manriquez conceptualizes lighting solutions as an integral component of the design process by understanding the critical role that lighting design plays in the way architecture evokes emotions. In response, he strives to raise awareness about the integration of lighting design to clarify how perceive architectural environments. Manriquez’s approach to lighting leverages data-informed design thinking to creatively position architecture, and technology to evoke moments that are transcendent.

The design team was challenged to balance the use of art, architecture, and technology to evoke moments that are intentionally subdued and others that spike the sensory experience. The quality of lighting and integration with technology and materiality challenges the notion that museum public space remain neutral to exhibit space and instead blurs those boundaries.

The presentation will showcase the integrated design processes, technical challenges, and solutions of the multiple experiential lighting installations. The discussion will exemplify improvement of solar analysis from conventional to parametric tools to leverage the efficiency of real-time workflow in comparison to early iterative studies.

Presenter: Rodrigo Manriquez
SmithGroup – Lighting Design Studio Leader
Mr. Manriquez conceptualizes lighting solutions as an integral component of the design process by understanding the critical role that lighting design plays in the way architecture evokes emotions. In response, he strives to raise awareness about the integration of lighting design to clarify how perceive architectural environments. Manriquez’s approach to lighting leverages data-informed design thinking to creatively position architecture, and technology to evoke moments that are transcendent.

The design team was challenged to balance the use of art, architecture, and technology to evoke moments that are intentionally subdued and others that spike the sensory experience. The quality of lighting and integration with technology and materiality challenges the notion that museum public space remain neutral to exhibit space and instead blurs those boundaries.

The presentation will showcase the integrated design processes, technical challenges, and solutions of the multiple experiential lighting installations. The discussion will exemplify improvement of solar analysis from conventional to parametric tools to leverage the efficiency of real-time workflow in comparison to early iterative studies.
Recent design awards to the Studio include:
-IES Award of Excellence, Wayne State University – School of Business, IES 2019
-IES Award of Excellence, Phoenix Sky Harbor Airport, IES 2018
-IES Award of Excellence, Museum of the Bible, IES 2018
-AIA Institute Honor Award for Interior Architecture, General Motors Design Dome- AIA 2017

Manriquez holds a Special Appointment as a Lecturer at the Durham School of Architectural Engineering and Construction, University of Nebraska, PKI. The course focuses on advanced design and analysis of lighting systems, with an emphasis on the application of the lighting design process.


Education Architectural Engineering, Lighting Design Emphasis, from the University of Kansas in 1997.

**TOPIC: Electric Vehicles**

Electric Vehicles (EVs) have advantages of low emissions, low fuel cost, and high performance. With many new models coming out in the next several years, the number of EVs on the road is expected to grow at a rapid rate. Planning for this growth will be an important consideration for building owners, architects and engineers, and city planners. It is important to have an understanding of the key considerations of the charging infrastructure needed to support EVs. Proper design and planning for charging of EVs now can save big dollars in the future.

**Presenter: Steve Zach, PE**

NPPD – Energy Efficiency Supervisor

Steve Zach is the Energy Efficiency Supervisor at Nebraska Public Power District. Steve has 28 years with NPPD, with the majority of his experience in the sustainable energy area. He leads the development and implementation of the energy efficiency program for NPPD’s retail and wholesale customers. Steve has prior work experience in engineering consulting, manufacturing, and nuclear engineering.

He graduated from the University of Nebraska in Lincoln in 1987 with a bachelor’s degree in Mechanical Engineering, and received a Master of Business Administration degree from Wayne State College in 2002. He is a Registered Professional Engineer in Nebraska and a Certified Energy Manager. He and his wife, Marie, reside in Columbus, where NPPD’s headquarters are located. They have four grown children and twelve grandchildren.

**TOPIC: Leveraging Energy Data: Utilizing Energy Management and Existing Building Best Practices to Optimize Facilities**

The presentation will provide attendees with a framework for utilizing energy data and energy management practices to benchmark and target potential existing building commissioning opportunities. The presentation will focus on informing attendees on how to leverage energy data to scope potential existing building commissioning opportunities from both a macro-level (whole building consumption) and micro-level (sub-meter) perspective. The presentation will provide definitions and examples of applications of utilizing macro level utility data to compare consumption data to screen opportunities using publicly available benchmarking resources. This presentation will also provide some example opportunities for energy savings reduction and improvement in comfort for popular systems.

**Presenter: Kenny Reed, PE, CCP, CEM, LEED BD+C**

SES – Director of Commissioning Services

Kenny is an advocate for developing strategies that leverage technology and facility operations data to improve building system performance. He has 12 years of industry experience, and has led large commissioning teams for complex mission critical facilities. His work includes new and existing facilities ranging from offices to healthcare and complex data centers. He is experienced in mechanical systems’ performance assurance and energy efficiency analysis, and reviews mechanical design control sequences that simplify operations and improve efficiency. He is passionate about the benefits and persistence related to ongoing and monitoring-based commissioning and is well versed in fault detection software and optimizing their use in new and existing facilities.
TOPIC: M’s PUB AND THE MERCER BUILDING; BACK FROM THE ASHES

On January 9th, 2016 a three alarm fire devastated the Mercer Building and M’s Pub in the heart of Omaha’s Old Market. Opened in 1972, M’s Pub was designed by architects Hartman, Morford Bowen, and during the following 44 years achieved iconic status as an Omaha Landmark.

Following the fire, City officials immediately issued a demolition order, fearing the unsupported building shell would collapse. BVH Architects were hired by the Mercer Management to assess the damage and determine if the building could be saved. Chicago forensic engineer Steve Kelley was engaged to examine the structure and determined that it was salvageable. Working with structural engineer Kip Squire, a stabilization plan was developed and the demo order was rescinded.

BVH (Architects) assembled a project team that included TD2 (structural), Morrissey Eng. (MEP) and Lund Ross (General Contractor) and proceeded to develop plans to reconstruct the historic Mercer Building and M’s Pub. After over a year of design and construction that traversed the spectrum of code compliance, variances, waivers, and Landmarks Commission reviews, the building shell was restored.

In late 2016, M’s Pub owner Ann Mellen decided to rebuild, stating that she wanted the new restaurant to look exactly like the original. It reopened in November, 2017, nearly two years after the fire. This presentation documents the two year long process of restoring the historic Mercer Building and M’s Pub to their original grandeur.

Presenter: Gary Bowen, FAIA
BVH Architecture – Principal Emeritus
- UNL College of Architecture: BA 1964; MA 1974
- Practiced architecture for 55 years in Omaha, London, UK., Washington D.C., Los Angeles, Ca., Quincy, Ill. (45 years with BVH).
- Architectural License: Nebraska and Iowa
- Notable projects: Gene Leahy Mall, Abrahams Branch Library, St. Wenceslaus Church, Beatrice Public Library, M’s Pub Reconstruction
- Past Public/Professional Service: Board of Directors, American Institute of Architects, Landmarks, Inc., Omaha Landmarks Commission, Western Heritage Museum, Omaha Parks Board
- Awards/Recognition: Fellow, American Institute of Architects; AIA Nebraska Cunningham Gold Medal

Presenter: Chris Reed, PE, LEED AP
Morrissey Engineering – Project Manager/Partner, Mechanical Engineer
- UNL, Master of Science in Mechanical Engineering
- Practiced engineering for 28 years in Kansas City, KS and Omaha, NE (20 years with Morrissey Engineering)
- Mechanical License: Nebraska, Iowa, Kansas, South Carolina, Texas, and Wyoming


Presenter – Kip Squire III, PE, SE
TD2 (Thompson, Dreessen & Dorner, Inc.) – Principal Owner, Structural Engineer
- South Dakota School of Mines & Technology, B.S. Civil Engineering 1978
- Structural Engineer in professional practice 42 years
- Professional Registrations in 18 states
- Notable projects: St. Vincent de Paul Catholic Church, Riverfront Tower Condominiums, Millard West High School, Creighton University College of Dentistry, UNMC Truhlsen Eye Institute, UNMC Lauritzen Outpatient Center, Numerous Historic Building Renovations including M’s Pub, OPPD Power Station (now named The Breakers), Creighton Medical Hospital (now named The Atlas), Old Market Lofts, Dundee Theatre, and Burlington Mail Terminal.
- Professional Organizations: Former Board of Directors, Structural Engineers Association of Nebraska and American Society of Civil Engineers
- Voluntary Organizations and Boards: Kiwanis Club of Greater Omaha; Teammates Mentoring Program

Presenter: Ken Kirkpatrick, LEED AP
BVH Architecture - Project Coordinator
UNL College of Architecture: Bachelor of Science in Design 2005; Master of Architecture 2007
Notable Projects: M’s Pub Reconstruction, Westside Middle School Renovation, Holy Trinity Catholic Church
Public/Professional Service: Westgate Community Foundation, founding member
TOPIC: The Multi-Generational Workforce, an Introduction
How we communicate with our coworkers impacts our ability to do our jobs effectively, especially when there are multiple generations represented. Please join me in this interactive session to learn about the generational makeup of our workforce so we can not only understand our differences—but embrace them. You’ll learn how our formative years shape each generation’s key traits and characteristics, as well as a technique to flex your style when encountering a Clash Point—a situation in which you and a coworker don’t see eye to eye. The goal: To all work better together.

Objectives:
- Recognize drawbacks and limitations of overgeneralizing generational attributes
- Identify key traits and characteristics of each generation
- Obtain ways to flex your style when working across different generations
- Gain helpful tips to apply after the presentation when working across different generations

Presenter: Kaylea Dunn, MS PHR
HDR – Performance Consultant
Kaylea Dunn has more than 17 years of experience in human resources, client relationships, and learning and development. Kaylea has extensive public speaking experience as well as an expansive background in relationship building, client engagement, and talent development programs. Upon joining HDR in February 2019, Ms. Dunn has contributed to the development and implementation of Managing Difficult Interactions (Conflict Resolution) training as well as Generations in the Workplace training. Kaylea uses her strength of connection to build relationships and networks while meeting her client’s needs. She is passionate about utilizing and engaging diverse talent to reach its fullest potential. She has consulted with several business groups, and enjoys process and business improvement projects. Kaylea received her Bachelor degree in Business Management from UNL in 2001, and her Masters of Science in Leadership Education from UNL in 2009. Kaylea has been involved in the supervision and design of plumbing systems since 2003. Layne has experience in many types of retail and commercial projects including mixed-use development, retail stores, malls, restaurants, offices and more.

Layne brings an understanding of how a project is put together from concept through opening. This knowledge allows Layne to provide meaningful input to project managers as they work with the design team. His areas of expertise include Plumbing Design, Design reviews of M/E/P plans, Calculations, Specification Writing, Field Survey, Construction Administration, Planning, Document Control, and Design Budget Control.

TOPIC: 3D Point Cloud Scanning in Design and Construction
New technology is around us every day. Point Cloud Scanning is one of those newer technologies which is gaining momentum across multiple industries. The basis of LiDAR technology has been around for many years, but mostly used by the military. Over the last several years companies have been able to harness the technology and make it more commercially available. Industries which are using point cloud scanning range from historical preservation to law enforcement to construction and design. Scanning technology is gaining traction in the design and construction industries as well as learn about some of the newest hardware and software. Make sure you stick around to see a live demonstration of a scanner and the viewer software.

Presenter: Layne Micek, EIT, CPD, GPD
Schnackel Engineering - Vice President, Plumbing Engineering Layne has been involved in the supervision and design of plumbing systems since 2003. Layne has experience in many types of retail and commercial projects including mixed-use development, retail stores, malls, restaurants, offices and more.

During his time with Schnackel he has also embraced new and emerging technologies. One of those technologies has been 3D Point Cloud Laser Scanning. Layne helped research, implement, and train the staff on the appropriate hardware and software for use at Schnackel Engineers. He continues to research and advise on the latest scanning technologies to keep them on the cutting edge. Layne received an Associate of Applied Science Degree from Southeast Community College in Milford, Nebraska in Architectural Engineering Technology.
**TOPIC: Existing Construction: An Introduction to the IEBC and NFPA 101 Provisions for Existing Buildings**

This presentation will introduce the building and life safety code provisions used to prescriptively address existing construction that undergoes repair work, alteration, renovation activity or construction of an addition, and the effect of a change in the building’s occupancy classification. Retroactive Fire code provisions and ‘performance compliance alternative’ methods will only be briefly referenced. In addition, the presentation will also address the similarities and differences between the 2015 editions of the International Existing Building Code (IBC, Chapter 34) and NFPA 101 (LSC, Chapter 43) in regards to performing work in existing buildings.

**Presenter: Michel Mason**  
HDR - Fire & Life Safety Specialist  
Michel Mason is Certified ICC plans examiner and Fire Inspector I, having worked for both the cities of Omaha and Papillion’s building departments, and is a Code and Life Safety Specialist for HDR’s Fire & Life Safety Department. Michel has previously presented on existing building codes to the Nebraska Code Officials Association.

**TOPIC: Indoor Environmental Quality in 220 classrooms in the Midwestern region and its association with K-12 Student Achievement**

A large-scale study has recently been conducted at the University of Nebraska – Lincoln, focused on determining how indoor environmental conditions in K-12 classrooms are related to student achievement. Information about the indoor air quality (IAQ), thermal comfort, lighting, and acoustic conditions have been collected from 220 classrooms across five school districts in Nebraska and Iowa. Data were collected under occupied and unoccupied conditions for two days in three seasons from 2015-2017. IAQ and thermal measurements included the indoor concentration of carbon dioxide, formaldehyde, the count of particles with aerosol diameters ranging from 0.3 μm to 2.5 μm and aerosol diameters ranging from 2.5 μm to 10 μm, air temperature, relative humidity, and globe temperature. View, daylighting and electric lighting data were collected to understand lighting conditions. Assorted background noise levels and room impulse responses from which reverberation times are extrapolated were collected for acoustics data. In addition, demographics and students’ performance data were included in this study. The field measurements revealed that all classrooms meet IES recommended illuminance level for reading and writing but only 20% of classrooms in this study met the ASHRAE Std. 62.1 ventilation rate requirements. In comparison to ANSI S12.60, 91% of the classrooms do not meet the recommended maximum background noise level for unoccupied conditions, while 15% do not meet the recommended maximum reverberation time. Multivariate linear regression analyses on the acquired data have identified a number of significant relationships between the environmental conditions and student outcomes, some of which interact with demographic variables. These results are discussed to highlight how indoor environmental quality may be optimized to benefit occupants in educational settings. [Work supported by the United States Environmental Protection Agency Grant Number R835633.]

**Presenter: Dr. Josephine Lau**  
University of Nebraska – Lincoln in Durham School of Architectural Engineering and Construction – Associate Professor  
Dr. Lau has expertise in air-cleaning technologies, indoor air quality, occupant’s well-being and performance, air flow simulation and measurement, and energy modeling and monitoring for various mechanical ventilation systems. Besides, she also served as the associate editor of the Journal of Architectural Engineering (JAE) and have held the deputy and regional editorships of the journal Indoor and Built Environment (IBE).

**Presenter: Dr. Clarence Waters**  
University of Nebraska – Lincoln in Durham School of Architectural Engineering and Construction – Aaron Douglas Professor  
Dr. Waters’ scholarly activities are in lighting and power distribution systems for buildings. He is currently or has been licensed in 21 states and received two International Lighting Design Awards of Merit. Dr. Waters is involved with the Architectural Engineering Institute (AEI) where he served on the Board of Governors and the Illuminating Engineering Society of North America (IESNA) where he has chaired and serves on many technical committees.

**Presenter: Dr. Adel KabiriKopaei**  
University of Nebraska – Lincoln in Durham School of Architectural Engineering and Construction – Graduate Assistant  

**Presenter: Michael Kuhlenengel**  
University of Nebraska – Lincoln in Durham School of Architectural Engineering and Construction
TOPIC: Codes and Controls 3.0: How lighting controls help meet commercial building energy code requirements in ASHRAE 90.1-2016, IECC 2018, and Title 24 2016

According to the U.S. D.O.E., other than process loads (e.g. motors, fans, machines...) lighting is the largest energy user in commercial buildings. Lighting consumes more energy than space heating, cooling, ventilation, refrigeration, electronics, water heating, cooking, and computers. Lighting controls can drastically reduce that appetite. They can eliminate 60% or more of the wasted lighting energy in buildings while enhancing occupant comfort and productivity.

Building energy codes understand the importance of lighting control toward reducing energy consumption. This session will review the mandatory lighting control requirements in the latest commercial building energy codes such as ASHRAE 90.1-2016 and IECC 2018.

Presenter: Jarret Golwitzer, CPMR
Integrated Sales Inc. - President
Jarret leads a group of 11 sales professionals who represent over 45 manufacturers specializing in the lighting, lighting control and shading systems categories. His team delivers sales, training and marketing services for industry influencers throughout Nebraska and Iowa and has offices in LaVista, Neb. and Van Meter, Iowa. He delivers CEUs and LUs for the architectural and engineering community; provides industry training on product implementation and project management; and works directly with electrical contractors to instruct on wiring techniques for lighting and lighting/shading control systems, as well as technical support for problem mitigation. His team is actively involved throughout the sales and implementation cycle to ensure projects stay on track and on budget. He feels education is vital to successful project delivery to the end user as the more customers know about products, the sequence of operations, and installation of lighting and controls the less likely there is to have project closeout issues.