This seminar will provide a review of the most common structural design and coordination considerations as they apply to building design. Experienced structural engineers will provide a brief review and comparison of common structural building systems. Other relevant topics such as typical design team structural coordination issues and a summary of the requirements for structural special inspections will be presented. Case studies illustrating the systems and issues will be included for projects such as: multistory wood housing, historic building facade restoration utilizing 3D laser scanning, multistory steel office building over below grade parking, multistory concrete office tower. Attendees will gain a better understanding of how the structural systems relate to overall building design and what information team members should be sharing in order for the designers to provide the best solutions for their clients.

Presentation outline

I. Scope and Services Offered by Structural Engineers

II. Fundamental Structural Systems and Considerations
   1. Foundation Types and Considerations
      a. Spread footings
      b. Deep foundations
      c. Ground modification
   2. Gravity System Considerations (Load Path/Load Path/Load Path)
      a. Steel Frame
      b. Concrete Frame
      c. Precast Concrete
      d. Wood stick
      e. Masonry
      f. Light Gauge Metal
   3. Lateral System Considerations (Load Path/Load Path/Load Path)
      a. Typical systems
      b. Wind load considerations
      c. Seismic load considerations

III. Structural Special Inspections and Testing
   1. What is required in Minnesota
   2. Other parts of the country
   3. High wind and high seismic requirements

IV. Coordination Items and Other Considerations

V. Case Studies
   • Caspian Bistro (vibration monitoring)
   • First National Bank Building (façade restoration and laser scanning)
   • Office tower, multistory post-tensioned concrete, skyway, parking ramp
   • Multistory wood housing
   • Washburn Center for Children (office building with various structural systems and parking below)
Practical Structural Engineering Building Design Considerations

Friday, June 20, 2014
Check-in Opens at 7:30 AM
Program 8:00 AM to 12:00 NOON
Location IMS, Studio 185
Credits 3.5 HSW LU Hours

Learning objectives
After attending this seminar, attendees will be better able to:

1. Review and select structural design options for best performance as it relates to the overall building design and impact on the integrity of the building.
2. Identify the most common structural design and coordination considerations including foundation types, gravity system and lateral system considerations.
3. Summarize the requirements for structural special inspections and testing.
4. Review case studies and explain how structural systems and issues were addressed.

Continuing education policy
AIA Minnesota is only able to give full credit for those who attend the entire seminar. If you arrive late or leave early, AIA members must complete a Self-Report Form to receive credit for the amount of time that you were at the seminar. Self-Report Forms can be found at www.aia.org.

Presenters
Douglas L. Fell is a Professional Engineer with over 35 years of structural engineering, design project management and construction project management experience with projects from schematic design through bidding and construction. His analysis and design expertise includes steel, concrete, post-tensioned and pre-stressed concrete, timber, and masonry structures.

Kurt Berglund is a Professional Engineer with over 25 years of structural and materials engineering experience. Mr. Berglund has expertise in building condition studies; restoration design; structural and site condition surveys; forensic studies; technical instrumentation for use with building condition and forensic surveys; and material testing.

Seth Spychala is a Professional Engineer with over 15 years of structural and materials engineering experience. A sample of Mr. Spychala’s expertise includes project management, emergency response, industrial design, design and analysis of new and existing building structures, proposal and contract administration, business development and marketing.

Timothy LaBissoniere is a Professional Engineer with over 25 years of experience, over which he has worked with a wide range of owners, architects, contractors, construction managers, developers and public agencies to assist in the design and construction of numerous structural projects. He is experienced in the analysis and design of steel, concrete, post-tensioned and pre-stressed concrete, timber and masonry structures.

Use this Enrollment Form or Register Online at http://www.aia-mn.org/int_continuing-ed/opportunities.cfm