Agenda

Presented by Gregory A. Robinson, P.E.

Treatment of Structure Loads in Building Codes and Standards
- Building codes
- Historical considerations
- ASCE 7-5 and 7-10
- CRSI, ASTM, API, AASHTO, FAA, AREA, AWWA, SCEANC, FEMA, etc

Dead Loads
- Definition of dead load
- Common materials and components

Live Loads
- Definition of live load
- Live load examples
  - Roofs, floors, walls
  - Traffic and various wheel loads, distribution considerations

Wind Loads
- ASCE 7 background
- Computing wind loads
  - Main Wind Force Resisting System (MWFRS)
  - Components
    - Parapets

Rain and Snow Loads
- Ponding and drainage
- Snow: Balanced, unbalanced and drifting

Water, Moving and Still
- Hydrostatic pressure
- Flood loads
  - Uplift, flowing water, scour, relief of flood forces
- Waves

Seismic, Blasting and Ground Vibration Loads
- Basic seismic considerations
- Ground motion and equivalent lateral force
- ASCE 7 design formulae and coefficients, how does all this work?
- Non-building structures
- Ground vibration from blasting

Earth Pressure Loads
- Retaining walls
- Buried structures
- Active, passive and at-rest conditions
- Live loads, direct and through soil

Application of Loads to Various Structures and Components
- Common building components: joists, rafters, beams, columns and walls
- Structural analysis considerations
- Examples and case studies
  - Wind loads on components
  - Foundation in flood-prone area
  - Buried vault

Using Spreadsheets and Software to Calculate Design Loads
- Spreadsheet design considerations
- Examples and case studies
- Buried vaults and culverts

You’ll be able to:

Explain the treatment of live, dead and additional loads in building codes and other standards.

Calculate dead and live loads on roofs, floors, walls, foundations, decks and balconies.

Perform calculations for loads on joists, rafters, beams and columns.

Explore wind, water, seismic and earth pressure loads.

Receive practical tips on using spreadsheets and other software to calculate design loads.

Learning Objectives

Calculating Design Loads for Residential and Small Commercial Buildings

Charlotte, NC - Tuesday, October 17, 2017

Review the treatment of live, dead and additional loads in building codes and other standards

Learn how to calculate dead and live loads for common components

Understand how to determine additional design loads due to wind, snow, flood and seismic activity

Continuing Education Credits

Professional Engineers
7.0 PDHs

Architects
7.0 HSW Contact Hours
7.0 AIA HSW Learning Units

International Code Council
.7 CEUs (Building)

Contractors
Non-Credit Continuing Ed.
Gregory A. Robinson, PE Consulting Engineer

Mr. Robinson is a graduate of North Carolina State University from which he received his Bachelor’s degree in Civil Engineering and his Master of Civil Engineering degree. He has 30 years of experience in the structural engineering field and has been in private practice for 24 years. Prior to establishing his own practice, Mr. Robinson worked for Bechtel Petroleum in San Francisco and various structural engineering firms in the Raleigh area. Mr. Robinson is a licensed professional engineer in 16 states. He has taught structural analysis classes at the community college level and has conducted numerous seminars over the last 20 years. He also served on a sub-committee for the North Carolina Building Code Council tasked with reviewing the provisions of the North Carolina Residential Code for interior moisture control and water intrusion. Mr. Robinson’s practice includes design, analysis and evaluation of steel, concrete, masonry and timber structures. He has investigated over 1,500 wood frame buildings for damage and has developed plans of repair for structures and finishes.

Webinar Series

HVAC Series
- Heating, Ventilation and Air Conditioning Principles
- HVAC System Design Considerations
- Evaluating HVAC Systems and Equipment
- HVAC System Controls and Techniques

The Distributed Battery Webinar Series
- The Distributed Battery Webinar, Part I
- The Distributed Battery Webinar, Part II
- The Distributed Battery webinar, Part III

Designing Solar Roofs and Community Solar
- Design Your Solar Roof
- Community Solar

Retaining Structures
- Earth Pressures and Surcharges
- Cantilever & Apparent Earth Pressures
- Apparent Earth Pressures

The Distributed Battery Webinar Series
- The Distributed Battery Webinar, Part I
- The Distributed Battery Webinar, Part II

Calculating Design Loads for Residential and Small Commercial Buildings

Continuing Education Credit Information
This seminar is open to the public and offers 7.0 PDHs to professional engineers and 7.0 HSW contact hours to architects, in most states, including North Carolina. HalfMoon Education is an approved continuing education provider for engineers in North Carolina.

This seminar is approved by the American Institute of Architects for 7.0 HSW Learning Units (Sponsor No. 1885). Courses approved by the AIA qualify for North Carolina architects. Only full attendance can be reported to the AIA/CES.

HalfMoon Education is an approved continuing education sponsor for architects in Florida and is deemed an approved sponsor in New York. HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Louisiana, Maryland, New Jersey (Approval No. 24GC00000700), New York (NYSED Sponsor No. 35), North Carolina, and North Dakota. The International Code Council has approved this event for .7 CEUs in the specialty category of Building.

This seminar also offers a non-credit continuing education opportunity to contractors. It has not been approved by any state contractor licensing entity.

Attention will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Can’t Attend? Order the CD/Manual Package:
An audio recording of this seminar is available for $289 (including shipping). Allow five weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

For more information visit: www.halfmoonseminars.org/webinars/

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