

## Credit Information

### **Septic System Design, Construction and Maintenance**

This webinar offers 6.5 PDHs to professional engineers and 6.5 HSW continuing education hours to architects licensed in all states.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider No. 0004647), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700) and North Carolina (S-0130). HalfMoon Education is deemed an approved continuing education sponsor for New York engineers and architects via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2) and §69.6(i)(2)). Other states do not preapprove continuing education providers or courses.

The American Institute of Architects Continuing Education System has approved this course for 6.5 LU | HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .65 CEUs in the specialty area of Sitework (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

### **Special Inspections under the International Building Code Chapter 17**

This webinar offers 7.0 PDHs to professional engineers and 7.0 HSW continuing education hours to architects licensed in all states.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider No. 0004647), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700) and North Carolina (S-0130). HalfMoon Education is deemed an approved continuing education sponsor for New York engineers and architects via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2) and §69.6(i)(2)). Other states do not preapprove continuing education providers or courses.

The American Institute of Architects Continuing Education System has approved this course for 7.0 LU | HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .70 CEUs in the specialty area of Building (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

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Recordings of each webinar are available for purchase. See course listing online for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit. Self-study packages do not qualify for AIA credit.

## Live, Interactive Webinars

- Septic System Design, Construction and Maintenance
- Special Inspections under the International Building Code Chapter 17

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## Live, Interactive Webinars

### **Septic System Design, Construction and Maintenance**

- Friday, November 19, 2021 | 8:30 am - 4:30 pm CST

### **Special Inspections under the International Building Code Chapter 17**

- Monday, November 29, 2021 | 10:00 am - 2:30 pm CST

- Tuesday, November 30, 2021 | 10:00 am - 1:15 pm CST

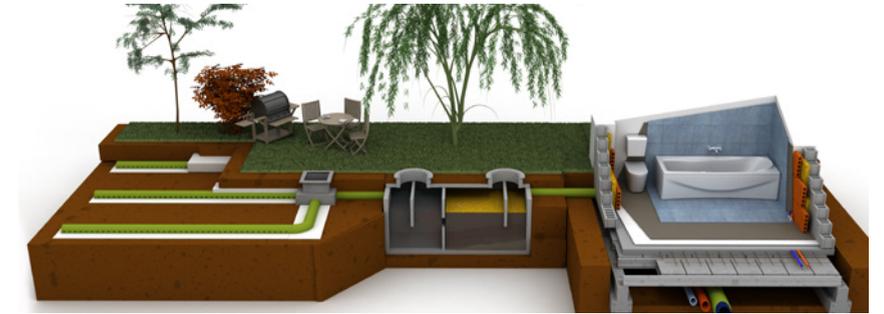
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## HalfMoon Education Live Webinars



### **Septic System Design, Construction and Maintenance**

Friday, November 19, 2021 | 8:30 am - 4:30 pm CST

Credits: Professional Engineers: 6.5 PDHs Architects: 6.5 HSW CE Hours

AIA: 6.5 LU | HSW International Code Council: .65 CEUs (Sitework)



### **Special Inspections under the International Building Code Chapter 17**

Monday, November 29, 2021 | 10:00 am - 2:30 pm CST

Tuesday, November 30, 2021 | 10:00 am - 1:15 pm CST

Credits: Professional Engineers: 7.0 PDHs Architects: 7.0 HSW CE Hours

AIA: 7.0 LU | HSW International Code Council: .7 CEUs (Building)

AIA  
Continuing  
Education  
Provider



# Septic System Design, Construction and Maintenance

Friday, November 19, 2021 | 8:30 am - 4:30 pm CST (incl. a 60-min break)

Tuition: \$289 per registrant, \$239 per registrant for three or more

Credits: Professional Engineers: 6.5 PDHs Architects: 6.5 HSW CE Hours  
AIA: 6.5 LU | HSW International Code Council: .65 CEUs (Sitework)

## Agenda

### Wastewater Characteristics and Impacts to Public Health and Environmental Quality

Technology and operation of conventional wastewater treatment systems  
Problems with conventional onsite systems  
Recent scientific and technical advances  
Performance-based management of systems

### Common Elements of Laws and Rules Impacting Onsite Wastewater Systems

Federal, state and local regulation of systems  
Coordinating system regulation with surface and groundwater regulations  
Treatment of systems under LEED certification systems  
Permit requirements and procedures  
Permitting procedures

### Site and Soil Assessments – The Foundation for Proper Design

System boundaries and loadings Analyzing the receiving environment  
Evaluating landscape and soil types Nitrogen and pathogen removal  
Treatment/removal of phosphorus and other pollutants  
Mapping the site

### Conventional Treatment System Selection and Design

Factors for selecting and sizing systems Design considerations  
System performance Initial system design

### Alternative Treatment and Dispersal Technologies

Aerobic treatment systems  
Peat biofilter wastewater treatment systems  
Drip dispersal wastewater disposal systems  
Fixed-activated sludge treatment Recirculating sand filters  
Trickling filters Sequencing batch reactors  
Vegetated submerged beds Evapotranspiration  
Enhanced nutrient removal  
Stabilization ponds and constructed wetlands

### System Management – Assurance that Onsite Infrastructure is Sustainable

Monitoring of systems Developing maintenance plans  
Inspection procedures Repair options

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# Special Inspections under the International Building Code Chapter 17

Monday, November 29, 2021 | 10:00 am - 2:30 pm CST (incl. two 15-min breaks)

Tuesday, November 30, 2021 | 10:00 am - 1:15 pm CST (incl. a 15-min break)

Tuition: \$289 per registrant, \$239 per registrant for three or more

Credits: Professional Engineers: 7.0 PDHs Architects: 7.0 HSW CE Hours  
AIA: 7.0 LU | HSW International Code Council: .7 CEUs (Building)

## Agenda Day One

### Overview of Special Inspections

Defining Special Inspections History of IBC Code, BOCA Code and Special Inspections  
Role of special inspector, architect, engineer, building official  
Anatomy of “Statement of Special Inspections”; required paperwork  
Referenced codes and referenced standards – problem solvers

### Soil and Foundation Inspections

Geotechnical Engineering 101 – does the Code require geo report?  
Subsurface investigations – verifying bearing capacity in the field  
Soils Special Inspections required by the Code  
Does the soils special inspector have to be present continuously?

### Concrete Special Inspections – ACI 318-14

Breaking down Table 1705.3 – Special Inspections are complicated  
Concrete reinforcement, anchor rods, post-installed concrete anchors  
First concrete code reorganization since 1971 (big changes!)  
Two chapters of ACI 318-14 are the same – 25 chapters are different  
Concrete mix design and exposure class is a whole new world

### Special Inspections for Sprayed Fire-Resistant Materials (SFRM)

Thickness tests on SFRM – density tests - frequency  
Bond strength – adhesion/cohesion tests – frequency  
What specific special inspections are required on SFRM  
Definition of high rise building – 150 PSF or 1,000 PSF bond strength

## Agenda Day Two

### Masonry Special Inspections - ACI 530, ACI 530.1, TMS 402, TMS 602

Masonry quality assurance levels are changing – what are they now  
All masonry specs require ASTM C780 testing – what does this mean  
Code requires verification of fm prior to construction – how?  
Code requires special inspector to verify submittals compliance

### Structural Steel Construction – Special Inspections

Reference Codes – AISC 360, AWS, RCSC, SJI, SDI  
Welding Code and Special Inspections  
Bolted connections and special inspections  
Types of bolted connections: snug-tight, pretensioned, slip-critical  
Special Inspections of Cold-Formed Steel (Decking)

### Glance Ahead - Next IBC Code Cycle (other things that you may not know)

New updated wind speed maps and seismic maps in Chapter 16  
New structural observations required for high rise or Risk Category IV  
Does the Code require special inspections on steel stairs and railing?  
Reduced web thicknesses in masonry units according to ASTM C 90  
Metal buildings – full pen welds must be ultrasonically tested in shop  
Is the proof rolling of site soils mandated by the IBC Code

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## Faculty

### Septic System Design, Construction and Maintenance

**Robert Rubin, A.R.** *Rubin and Associates in Pittsboro, North Carolina*

Dr. Rubin is an emeritus professor in the Biological and Agricultural Engineering Department at North Carolina State University. He has published in scientific journals and popular press on issues related to wastewater and biosolids treatment, solid waste management, stormwater management and ISO 14000 environmental management systems addressing the animal industry. Dr. Rubin was a visiting scientist at the U.S. Environmental Protection Agency (EPA) in Washington D.C. from 1999 through 2005. He was active in development of guidelines for wastewater and biosolids management at USEPA. Dr. Rubin is currently president of A.R. Rubin and Associates, a consulting firm dedicated to evaluation and assessment of sustainable resource management and recovery solutions.

**Scott Mitchell, PE, LSS** *President at Mitchell Environmental, PA in Fuquay-Varina, NC*

Mr. Mitchell is the founder and President of Mitchell Environmental, PA, a multidisciplinary consulting firm specializing in septic systems, wetlands, and stormwater, through an effective merger of soil science, engineering, and environmental sciences. With over 20 years of experience in land development, Scott is an expert in land use consulting and specializes in advanced onsite wastewater systems, stormwater BMPs, wetland and surface water identification, delineation, impact permitting, and Phase I environmental site assessments. He is a licensed professional engineer and soil scientist and an active member of the Soil Science Society of North Carolina, the Virginia On Site Water Recycling Association (VOWRA), the National On Site Water Recycling Association (NOWRA), and the North Carolina Irrigation Society.

### Special Inspections under the International Building Code Chapter 17

**Alan S. Tuck** *Executive Director of Code Compliance and Training with Froehling & Robertson, Inc.*

Mr. Tuck has more than 50 years of experience in the materials testing and construction inspection industry. He has been a code influencer. In the early 1990's, he published a 47 page Construction Specifications Institute (CSI) monograph entitled “BOCA Special Inspection Services” as a learning and teaching tool for testing agencies, architects, engineers, municipalities, and building officials, etc. This document became the foundation for the original Chesterfield County, Virginia, special inspection program which today is known to be one of the best special inspection programs in the region. This CSI monograph impacted and assisted the development of special inspection programs of many other Virginia jurisdictions during the early days of BOCA and IBC. Today, Mr. Tuck is the building code “go to” guy when architects, engineers, contractors and building officials across the Mid-Atlantic have special inspection questions about their ongoing projects.

He started his career with Froehling & Robertson in 1964 as a materials technician and fulfilled many duties including senior field technician, radiographic assistant, drill rig operator, laboratory technician, and structural steel inspector, quickly being promoted to branch manager of the Roanoke office in 1966. Over the next few decades, Mr. Tuck also managed F&R's operations in Norfolk, Lynchburg, and Chesapeake, Virginia. During this time, he was designated as the company-wide manager of construction materials testing services, working in F&R's Richmond headquarters. In the late 1990's, Mr. Tuck took on company business development. His success in this realm led to Mr. Tuck being elevated to the role of vice president of business development. His responsibilities in this role included hiring, training, and supervising business development managers throughout the company's Mid-Atlantic footprint. F&R was established in 1881 and is one of the oldest consulting engineering firms and testing agencies in the United States.

Mr. Tuck developed training courses related to special inspection requirements of the International Building Code (IBC) and the various statewide building codes in jurisdictions where F&R maintains operations, including Maryland, Virginia, District of Columbia and the Carolinas. He cultivated and expanded inter-company special inspections code training courses for F&R's technicians, special inspectors and engineers. These technical code training courses formed the basis of F&R's Continuing Education Program and Lunch & Learn Series which are comprised of building code training courses regarding soils, geotechnical engineering, concrete, masonry, sprayed fire-resistant materials, structural steel and many other disciplines. These courses are now offered to the entire Mid-Atlantic community of architects, engineers, construction professionals as well as associations, municipalities, school systems and a host of other market sectors. As F&R's very first executive director of code compliance and training, Mr. Tuck has provided special inspections training and code training to hundreds of firms and thousands of professionals over the past decade and has dedicated this phase of his professional career to the study and instruction of the various building code changes throughout the different code cycles. He also is well versed in the major code changes of the “enforcer” codes such as AWS (welding), AISC (steel), ACI 318 (concrete), ACI 530 (masonry), in addition to the latest revisions of the International Building Code (IBC) and statewide codes within F&R's geographical region.

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