

Agenda

Presented by Nathan Walsman

Parking Geometrics and Layout

Typical parking layout

- One-way vs two-way traffic
- End bay parking
- Turning bay requirements
- Square footage per space

Vertical circulation

- Parking ramp requirements
- Helical ramp requirements
- Express ramp requirements and transitions

ADA requirements

- Required amount of ADA accessible spaces
- Required amount of van accessible spaces
- Vertical clearance requirements
- Floor slope requirements

Egress requirements

Open vs enclosed classification

Expansion joint locations

Structural Systems for Parking Structures

Typical construction types

- Cast-in-place, post-tensioned concrete
 - One-way beam/slab
 - Two-way flat plate
- Prestressed, precast concrete
- Steel construction

Comparisons of the systems

- Durability of the systems
- Confined site issues
- Construction issues
- Restraint considerations
- Lighting

Parking Structure Design

Loading requirements

- Live load
- Snow load
- Wind load
- Seismic load
- Thermal, creep, shrinkage, shortening

Design criteria

- Tensile stresses and classification
- Minimum P/A stress
- Minimum bonded reinforcement
- Balanced dead load
- Loss of tendons during construction

Lateral Force Resisting Systems

Types of lateral force resisting systems

- Moment frames
- Cantilevered columns
- Shear walls and lightwalls

Ideal locations for shear walls

- Visibility and safety
- Effects on volume change

Durability and Maintenance

Mix design and classification

Life cycle cost analysis

Routine maintenance guidelines

Add mixture options

Finishing and curing

Construction Issues

Sleeves and conduits

Tendon blowouts

Tendon profile issues

Post installed anchors

Parking Structure Design, Construction and Maintenance

Middleburg Heights, OH - Tuesday, December 4, 2018



Halfmoon Education Inc.
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Learning Objectives

You'll be able to:

Review parking layout for one-way and two-way traffic, and discuss square footage per space.

Consider ADA requirements for floor slope, vertical clearance and accessible parking spaces.

Examine load requirements for live loads, and for snow, wind and seismic loads.

Explore lateral force resisting systems, including moment frames, shear walls and cantilevered columns.

Handle construction issues, including tendon profile issues, tendon blowouts and post-installed anchors.



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Discuss parking lot layout and vertical circulation requirements

Review ADA accessibility standards and egress requirements

Examine cast-in-place and post-tensioned structures

Explore loading requirements for live loads, and for snow, wind and seismic loads

Learn techniques for improving durability

Continuing Education Credits

Professional Engineers

6.5 PDHs

Contractors

Non-Credit Continuing Ed.

Architects

6.5 HSW Continuing Ed. Hours

6.5 AIA HSW Learning Units



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Faculty

Nathan Walsman *Principal at Schaefer*

Mr. Walsman graduated from Purdue University with BS and MS degrees. He has been a principal engineer at Schaefer in Cincinnati since 2005. Mr. Walsman has a proven resume of work experience in the area of structural engineering and in parking structures in particular. He has been working in structural engineering since 1999, and has since designed over 40 parking structures.

Additional Learning

Webinar Series

- Geothermal Heating and Cooling**
 - Thermodynamic Basics of Geothermal Systems**
Thurs., Nov. 1, 2018, 11:00 AM - 12:00 PM CDT
 - Understanding Earth Loop Systems**
Thurs., Nov. 1, 2018, 12:30 - 2:00 PM CDT
 - Choosing and Designing Geothermal Systems**
Fri., Nov. 2, 2018, 11:00 AM - 12:00 PM CDT
 - Evaluating and Maintaining Geothermal Systems**
Fri., Nov. 2, 2018, 12:30 - 2:30 PM CDT
- Cogeneration System Principles and Practice**
 - Understanding the Benefits of Cogeneration**
Thurs., Nov. 8, 2018, 11:00 AM - 12:30 PM CST
 - Laws, Regulations and Building Codes Impacting Cogeneration**
Thurs., Nov. 8, 2018, 1:00 PM - 2:30 PM CST
 - Examining Cogeneration Technologies**
Fri., Nov. 9, 2018, 11:00 AM - 12:30 PM CST
 - Moving to Cogeneration: Analysis, Modeling and Case Studies**
Fri., Nov. 9, 2018, 1:00 - 2:30 PM CST

Shallow Foundation Design and Construction

- Evaluating Building Sites**
Wed., Nov. 14, 2018, 11:00 AM - 12:30 PM CST
- Shallow Foundation Design**
Wed., Nov. 14, 2018, 1:00 - 2:30 PM CST
- Special Considerations in Foundation Design and Construction**
Thurs., Nov. 15, 2018, 11:00 AM - 12:30 PM CST
- Soil Improvement and Foundation Diagnosis and Repair**
Thurs., Nov. 15, 2018, 1:00 - 2:30 PM CST

Roadway Design

- Roadway Design**
Thurs., Nov. 29, 2018, 11:00 AM - 12:30 PM CST
- Roadway Design Process**
Thurs., Nov. 29, 2018, 1:00 - 2:00 PM CST
- Typical Roadway Sections and Alignment**
Fri., Nov. 30, 2018, 11:00 AM - 1:30 PM CST
- Intersections, Drainage and Pedestrian-Bicycle Facilities**
Fri., Nov. 30, 2018, 2:00 - 3:30 PM CST

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

Seminar Information

Crowne Plaza Cleveland Airport 7230 Engle Road Middleburg Heights, OH 44130 (440) 243-4040	Registration 8:00 - 8:30 am Morning Session 8:30 am - 12:15 pm	Lunch (On your own) 12:15 - 1:15 pm Afternoon Session 1:15 - 4:30 pm
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Tuition
\$279 for individual registration
\$259 for three or more simultaneous registrations.

Included with your registration:
Complimentary continental breakfast and printed seminar manual.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar (CDT), and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the CD/manual package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 6.5 PDHs to professional engineers and 6.5 HSW continuing education hours to architects in all states, excluding Florida architects. Educators and courses are not subject to preapproval in Ohio.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), New York (NYSED Sponsor No. 35), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York architects.

This seminar is approved by the American Institute of Architects for 6.5 HSW Learning Units (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

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

Attendance 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:

A full recording of this seminar is available for \$289, which includes shipping and handling. This learning method does not qualify for the continuing education requirements of Ohio engineers, architects, and AIA members. No contractor credit available. Please allow five weeks from the seminar date for delivery.

Registration

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How to Register	Registrant Information
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Complete the entire form. Attach duplicates if necessary.	Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
	() I need special accommodations. Please contact me.

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.

() **I am not attending.** Please send me the CD manual package for **\$289.00**. (S&H included. Please allow five weeks from seminar date for delivery)

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