

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

Admixture options

Finishing and curing

Construction Issues

Sleeves and conduits

Tendon blowouts

Tendon profile issues

Post installed anchors

Parking Structure Design, Construction and Maintenance

Cincinnati, OH - Friday, February 28, 2020



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Learning Objectives

You'll be able to:

Identify and describe requirements for parking layout, including one-way vs. two-way traffic, turning bay requirements and square footage per space.

Consider requirements for vertical circulation in parking structures, and meet standards for accessible parking spaces required under the Americans with Disabilities Act.

Compare typical construction types for parking structures, including cast-in-place, prestressed precast concrete, and steel construction.

Comply with loading requirements for parking structures, including live loads, snow loads, wind loads and seismic loads, and utilize lateral force resisting systems in parking structures.



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Discuss parking lot layout and vertical circulation requirements

Review ADA accessibility standards and egress requirements

Examine cast-in-place, post-tensioned concrete structures and precast, prestressed structures

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

Learn techniques for improving durability

Continuing Education Credits

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Faculty

Nathan Walsman, P.E. *Principal at Schaefer in Cincinnati, OH*
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 he has since designed over 40 parking structures.

Here’s what attendees had to say about the program and presenter Nathan Walsman:

- “Great presenter, very knowledgeable on topics.” — Structural Engineer
- “Good seminar.” — Architect
- “Good overview, good balance between depth and breadth.” — Professional Engineer

Seminar Information

Holiday Inn Eastgate (I-275E) 4501 Eastgate Blvd. Cincinnati, OH 45245 (513) 752-4400	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
\$289 for individual registration
\$269 for three or more simultaneous registrations.

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

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

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, 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 self-study package. You may also send another person to take your place.

Additional Learning

Webinar Series
Ethical Issues for Engineers

- **Handling Ethical Issues in Professional Engineering Practice**
Fri., Jan. 17, 2020, 12:00 - 2:00 PM CST
- **Resolving Disputes and Handling Ethical Issues in Government Projects**
Fri., Jan. 31, 2020, 12:00 - 1:00 PM CST
- **Complying with Rules of Professional Conduct**
Fri., Feb. 14, 2020, 12:00 - 1:00 PM CST

Aerial Mapping Technologies and Procedures

- **Overview of Aerial Mapping Technologies and Platforms**
Thurs., Jan. 23, 2020, 11:00 AM - 12:30 PM CST
- **Mapping Using UAS and Photogrammetry**
Thurs., Jan. 23, 2020, 1:00 - 3:00 PM CST
- **Post Processing Software Applications and Photogrammetry Demonstration**
Fri., Jan. 24, 2020, 11:00 AM - 1:00 PM CST
- **FAA Commercial UAS Regulations and FAA Part 107**
Fri., Jan. 24, 2020, 1:30 - 3:00 PM CST

Off-Grid Master Class

- **Part I**
Wed., Jan. 22, 2020, 11:00 AM - 2:15 PM CST
- **Part II**
Thurs., Jan. 23, 2020, 11:00 AM - 2:15 PM CST

Introduction to the World of BIM and the Revit Basics

- **BIM and Revit Overview**
Wed., Jan. 29, 2020, 11:00 AM - 12:30 PM CST
- **Revit Model Building and Elements**
Wed., Jan. 29, 2020, 1:00 - 3:00 PM CST
- **Creating Sheets in Revit**
Thurs., Jan. 30, 2020, 11:00 AM - 12:30 PM CST
- **Revit Drafting and 3D Model Management**
Thurs., Jan. 30, 2020, 1:00 - 3:00 PM CST

For more information and other online learning opportunities visit:
www.halfmoonseminars.org/webinars/

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. Educators and courses are not subject to preapproval in Ohio.

This American Institute of Architects Continuing Education System has approved this course for 6.5 LU|HSW (Sponsor No. J885). Only full attendance is reportable to the AIA/CES. Visit www.halfmoonseminars.org for complete AIA/CES information under this course listing.

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

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 Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$269. 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

Parking Structure Design, Construction and Maintenance
Cincinnati, OH - Friday, February 28, 2020

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Tuition

() **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.

() **I am not attending.** Please send me the self-study package:

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