

Agenda

Presented by Feng Mu, Ph.D., P.E., and Robert Rodden, P.E.

Design Principles

The owner's expectations and translating them to design criteria
Design considerations

- Support systems (subgrade/base/subbase) and geotechnical modifications/improvements
- Loading and traffic characterization
- Concrete characteristics: curling, shrinkage, load and fatigue capacity
- Impact of reinforcement (steel and fibers) on the system
- Managing cracking with joints
- Interaction of design variables to understand the need for a systematic approach

Modeling methodologies and design guidelines

Design optimization and managing design and construction risks

Exterior Concrete Pavement Design

Design considerations for over-the-road traffic

Common design methodologies (Pavementdesigner.org, ACI 330, AASHTO)

Optimizing pavement designs

Ensuring serviceability and performance beyond design criteria

- Jointing and sealing (drainage)

Construction and acceptance

Interior Concrete Slabs-on-Ground Design

Type of facilities and performance requirements

ACI 360 Design Guide

Jointing and joint filling

Construction and acceptance (technologies)

Design Examples

Pavement examples:

- Entrance/exit route to facility
- Car parking area
- Over-the-road truck trafficked areas
- Odd loading

Slabs-on-ground examples:

- General warehouse (reinforced vs unreinforced)
- Refrigerated distribution facility
- Odd industrial loading

Maintenance and Sustainability

Slabs-on-ground maintenance and repairs

Exterior pavement maintenance and rehabilitation

Life cycle cost analysis (design comparison considering economics and risks)

- User cost (maintenance, down time, equipment repairs, etc.)

Sustainable practices

- Life cycle assessment and rating frameworks
- Pervious pavements
- Lighting

**Design of Concrete Slabs-on-Ground and
Pavement for Private Facilities**
Austin, TX - Thursday, September 27, 2018

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Learning Objectives

You'll be able to:

Understand owner expectations and translate them into design criteria.

Consider loading and traffic.

Compare steel and fiber reinforcement, and manage cracking with joints.

Look at design considerations for interior concrete slabs-on-ground.

Review parking lot, driveway, facility entrance, warehouse and distribution facility examples.

Adopt practices to promote sustainability and preserve pavements.



Design of Concrete Slabs-on-Ground and Pavement for Private Facilities

Austin, TX - Thursday, September 27, 2018



Understand design principles for pavement and slabs-on-ground

Identify common design considerations and modeling methodologies

Consider traffic and loading

Examine design examples for pavement and slabs-on-ground

Learn about maintenance and sustainability of pavements and slabs

Explore life cycle cost analysis

Continuing Education Credits

Professional Engineers

6.5 PDHs

Architects

6.5 HSW CEPHs/CE Hours

6.5 AIA HSW Learning Units

Contractors

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Faculty

Feng Mu, Ph.D.
Senior Engineer at PNA Construction Technologies
Dr. Mu is a licensed professional engineer in the state of Texas, and he has over 10 years of experience in concrete paving, engineering and research. Dr. Mu has a master’s degree in Geotechnical Engineering and a doctorate degree in Pavement Engineering. He has authored over 30 peer-reviewed technical papers, some of which have been highly recognized or awarded in the pavement community. He currently serves on the Pavement Maintenance Committee of the Transportation Research Board (TRB) of the National Academies. He is also the co-chair of the Pavement Design Committee of the American Concrete Pavement Association (ACPA). Dr. Mu has developed optimized paving solutions and life cycle analysis/assessment for many roadway, commercial and industrial projects.

Robert Rodden, P.E.
Engineering Manager at PNA
Mr. Rodden has dedicated his entire career to concrete pavements and slabs-on-ground. Through his research while earning bachelor and master of science degrees in Civil Engineering from the University of Illinois at Urbana-Champaign, Mr. Rodden discovered his love of concrete materials and flatwork. His nine years of experience with the American Concrete Pavement Association (ACPA) focused on assisting engineers and contractors with project designs and details, responding to technical service inquiries, and developing publications and tools to support the industry. Prior to joining PNA, Mr. Rodden served dual roles as the executive director of the International Society for Concrete Pavements (ISCP) and as a research engineer at Lafarge-Holcim’s global research center in France. Through these efforts, he has contributed over 1,000 pages of published text, provided consulting services, and lead hundreds of presentations and discussions around the world on all aspects of concrete flatwork, including design, materials, construction, performance, preservation, and life-cycle cost analysis.

Seminar Information

Hilton Garden Inn Downtown
500 North Interstate 35
Austin, TX 78701
(512) 480-8181

Registration
8:00 - 8:30 am
Morning Session
8:30 - 11:30 am
Lunch (on your own)
11:30 am - 12:30 pm
Afternoon Session
12:30 - 4:30 pm

Tuition
\$279 for individual registration
\$259 for three or more registrations.
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Additional Learning

Webinar Series

Community Solar and Rooftop Solar

- **Community Solar**
Wed., Sept. 5, 2018, 11:00 AM - 2:15 PM CDT
- **Design Your Solar Roof**
Thurs., Sept. 6, 2018, 11:00 AM - 2:15 PM CDT

Seismic Design and Construction

- **Seismology and Building Codes**
Wed., Sept. 12, 2018, 11:00 AM - 3:30 PM CDT
- **Seismic Design of Building Structures**
Thurs., Sept. 13, 2018, 11:00 AM - 3:30 PM CDT

Small Wind Energy Systems

- **Small Wind Energy System Components**
Thurs., Sept. 20, 2018, 11:00 AM - 1:00 PM CDT
- **Small Wind Energy Siting and Sizing**
Fri., Sept. 21, 2018, 11:00 AM - 1:00 PM CDT

International Green Construction Code

- **Introduction to the International Green Construction Code (IgCC)**
Thurs., Sept. 20, 2018, 11:00 AM - 12:30 PM CDT
- **Chapters 4-5: Site Development and Material Use**
Thurs., Sept. 20, 2018, 1:00 - 2:30 PM CDT
- **Chapters 6-9: Energy, Water, Environmental Quality and Building Commissioning**
Fri., Sept. 21, 2018, 11:00 AM - 12:30 PM CDT
- **Chapters 10-11: Existing Buildings**
Fri., Sept. 21, 2018, 1:00 - 2:30 PM CDT

Slope Stabilization and Landslide Prevention

- **Analyzing the Stability of Slopes**
Tues., Sept. 25, 2018, 11:00 AM - 2:15 PM CDT
- **Slope Stabilization Methods**
Thurs., Sept. 27, 2018, 11:00 AM - 2:15 PM CDT

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Registration

Design of Concrete Slabs-on-Ground and Pavement for Private Facilities
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How to Register	Registrant Information Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____ Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____ 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.
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Tuition
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