

# Design and Construction of Concrete Parking Structures

ONE DAY, 7.5 HOURS

Design and Build to Last

## Program Content:

### ■ Design and Material Considerations

- Selecting the Structural System
  - Good Design Practices for All Types of Construction
  - Designing for Loads
  - Provisions for Forces and Deformations Due to Restraint of Volume Change and Differential Settlement
  - Joints
  - Cracks and Crack Control
  - Drainage Planning and Design
  - Corrosion Resistance
  - Fire Performance (rational design)
  - Future Expansion
  - Lighting
  - Security (life/safety considerations)
  - Stair/Elevator (vertical egress) Shaft Design and Location
  - Specifications for Materials, Construction, and Means and Methods
- ### ■ Requirements for Durability
- Concrete
  - Additives (silica fume, corrosion inhibitors, and admixtures)
  - Epoxy Coated Reinforcing
  - Concrete Sealers and Waterproofing Systems

- Membranes
- Cover of Reinforcing
- Joint Sealing
- Protection of Embedded Hardware
- Sloping for Adequate Drainage (durability design for targeted service life)

### ■ Design Benefits, Materials, and Construction Considerations

- Special Considerations for Precast/Prestressed Concrete
- Lateral Load-Resisting Systems
- Cast-in-Place Concrete (post-tensioned systems)
- General
- Life Cycle Costs and Service Life Expectation

### ■ Maintenance for Durability

- General
- Maintenance Schedules and Manuals
- Condition Audits
- Repairs

### ■ Innovations in the Concrete Parking Garage Market

- Mixed Use
- Architectural Considerations

## Who should attend:

Designers, material suppliers, contractors, building owners, and maintenance personnel.

## Instructors:

Ned M. Cleland, Thomas J. D'Arcy, Degan G. Hambacher, Keith W. Jacobson, Donald R. Monahan, and H. Carl Walker. For more detailed information on the faculty, go to [www.concreteseminars.com](http://www.concreteseminars.com).

## Seminar handouts:

- Precast, Prestressed Parking Structures: Recommended Practice for Design and Construction (PCI MNL 129-98)
- Guide for the Design of Durable Concrete Parking Structures (ACI 362.1R)
- Special handout with notes and design examples authored by the instructors

