

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.

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

