



# Concrete Education

for construction professionals

**Pacific Southwest Concrete Alliance:**

*Providing quality training and continuing education credits*

2009 CNCA and Promotion Partner Presentation Menu Spring 2009

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# Sustainability and Environmental Issues

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## >>Designing Green with Gray – Confronting CO<sub>2</sub> with Cement and Concrete

*Tom Tietz, Executive Director California Nevada Cement Association*

Length: 1 Hour, with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

Recognize real CO<sub>2</sub> impact of cement and concrete production, address climate change with concrete specifications and identify solutions to mitigate global warming in site and building design.

*Owners, Developers, Architects, Civil and Structural Engineers*

## >>Concrete Solutions for a Sustainable Future

*Paulette Salisbury, Technical Specialist, California Nevada Cement Association*

Length: 1 hour, with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

This session is an overview of the ways structures can be built to attain LEED certification and encourage market transformation toward sustainable design. - Understand the importance of building with durable long-lasting traditional materials in innovative designs using Life Cycle Analysis tools. -Learn how to conserve storm water run-off by filtering it through pervious pavement. -Develop concepts for reducing albedo with light surfaces thus reducing energy consumption -Address climate change through material specifications for concrete.

*Owners, developers, public officials, architects.*

# Pervious Concrete

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## >>Pervious Concrete – A Stormwater Solution

*Rob Wallace, Executive Director Concrete Promotion Council of Northern California*

*Paulette Salisbury, Technical Specialist California Nevada Cement Association*

*Tom Tietz, Executive Director California Nevada Cement Association*

Length: 1 Hour, with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

Pervious Concrete Pavements offer the advantage of managing stormwater at the source by infiltrating the precipitation immediately without overburdening the city storm sewer system and without wasting valuable land for detention ponds. This presentation illustrates many examples as well as design and installation methodology.

*Owners, Developers, Architects, Civil and Geotechnical Engineers*

## **>>Pervious Concrete – How it Works and How to Construct**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: 1 Hour, with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

An overview of the basics of pervious concrete as a storm water treatment system with examples of how to properly construct. Provides examples of completed projects.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Contractors, Inspectors*

## **>>Pervious Concrete Pavement Design**

*Craig Hennings, Executive Director, ACPA Southwest, David Akers, CNCA*

Length: 4 hours

Credit: 4 Professional Development Hours through the California Nevada Cement Association

This course covers the basics of Pervious Concrete Pavement thickness design and water storage capability. The ACPA's *StreetPave* and NRMCA's *Concrete Pavement Analyst* design tools will be demonstrated and practical examples given. This workshop covers important topics pertaining to the thickness of pervious concrete pavements, including: pervious concrete materials; water storage; the importance of soil characteristics; and the design process.

*Public works officials, engineers, civil engineers*

## **>>Pervious Concrete Design**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: 1 Hour, with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Using standard design programs, introduces the design of pervious concrete on a hydrologic and structural basis. Illustrates how to develop life-cycle costs for pervious pavements.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Contractors*

# **Concrete and Cement**

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## **>>Concrete Materials**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: 1 Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Review of materials used to produce portland cement concrete: portland cement, supplementary cementitious materials, aggregates, and chemical admixtures. Discusses elements of concrete mix development.

*Civil and Structural Engineers, Inspectors, Construction Managers*

# Paving

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## >>Concrete Paving

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: 1 Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Recognizes the difference between fixed and slip-form paving operations, the need for proper curing, the reasons for jointing panels.

## >>Concrete Pavement Construction and Inspection

*Craig Hennings, Executive Director, ACPA Southwest*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

Haven't built a concrete pavement in quite a while? New staff you want to train? A course for DOT and agency personnel, the course covers: concrete construction equipment, the best practices for slip forming PCCP pavements, working with contractors, weather concerns during concrete placement, and inspection of the project

*Public works officials, engineers, DOTs*

## >>Concrete Pavement Thickness Design

*Craig Hennings, Executive Director, ACPA Southwest*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

This course covers the basics of Concrete Pavement Thickness Design. The ACPA software StreetPave will be demonstrated and practical examples given. This workshop covers important topics pertaining to the thickness for concrete pavements, including: concrete materials, underlying support layer strength; the types and causes of pavement distress; and the design process. Class exercises include how to: calculate wheel load damage; identify pavement distresses; and determine pavement thickness.

*Public works officials, engineers, civil engineers*

## >>Concrete Pavement Intersection Design

*Craig Hennings, Executive Director, ACPA Southwest*

Length: 4 hours

Credit: 4 PDHs

You know you need concrete. Now learn how to design an intersection in concrete. This workshop covers critical topics pertaining to design of intersections: Concrete materials, design, learn how to deal with embedded items, traffic loop detectors, curb and gutter, jointing, and marking.

*Public works officials, engineers, civil engineers*

## **>>General Pavement Design**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: 1 Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Present the elements of portland cement concrete pavement design from subgrade through the finished surface. Discusses the interactions between each element influences the final product.

*Civil Engineers, Construction Managers, Public Works Departments, Paving Contractors, Inspectors*

## **>>Basic Pavement Design Considerations**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: One Hour with Q&A

Credit: .5 Professional Development Hour through the California Nevada Cement Association

Reviews the elements of portland cement concrete pavement design and how they combine to produce long life pavements.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Paving Contractors, Inspectors*

## **>>Concrete Intersection Construction**

*Craig Hennings, Executive Director, ACPA Southwest Jim Tobin, ACPA Northwest*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

The practical aspects of re-constructing an existing intersection with concrete pavement under traffic will be discussed. Examples will be given on rapid construction under traffic, which can be accomplished in as little as 72 hours. Weather concerns during concrete placement and how to use Hiperpav software will also be discussed.

*Public works officials, engineers, civil engineers*

## **>>Cement and Concrete Technology in Pavements**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: One Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

An overview of how portland cement can be used to modify or treat soil materials for subgrades and bases and for concrete to construct new pavements. End products are cement-treated soil, stabilized soil, cement-treated base, full-depth reclamation, roller-compacted concrete, soil-cement, conventional concrete pavement, pervious concrete, and ultrathin whitetopping.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Paving Contractors, Inspectors*

### **>>Caltrans Just-In-Time-Training**

*Craig Hennings, Executive Director, ACPA Southwest David Akers, CNCA*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

This workshop meets the requirements of the Caltrans mandated Just-In-Time-Training for Portland Cement Concrete Pavement slip form paving or fixed form paving projects. The workshop covers: why the class is necessary, concrete materials, concrete production and hauling, design consideration, slip form paving, fixed form paving, finishing and curing, and sawing and sealing operations.

*Public works officials, engineers, DOTs*

## **Repair and Maintenance**

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### **>>Repairing Concrete Pavements**

*Paulette Salisbury, Technical Specialist, California Nevada Cement Association*

Length: 1.0 hr. with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

Presents material selection methods based on ICRI Guidelines as well as surface preparation techniques. Offers suggested guideline specification language to assure sound, long-lasting repairs to concrete pavements for roadways, runways, and ramps.

*Structural and civil engineers, public works officials.*

### **>>Concrete Pavement Maintenance**

*Craig Hennings, Executive Director, ACPA Southwest*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

Now that you have concrete pavements, how do you maintain them? Luckily, concrete needs very little maintenance, but this benefit leads to a maintenance crew that falls out of practice. This course covers the basics of diamond grinding, crack repair, slab replacement, use of rapid strength concrete, joint maintenance, subgrade stabilization, and utility cuts.

*Public works officials, engineers, civil engineers*

## **>>Repairing Structural Concrete**

*Paulette Salisbury, Technical Specialist, California Nevada Cement Association*

Length: 1.0 hr. with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

Presents material selection methods based on ICRI Guidelines as well as surface preparation techniques. Offers suggested guideline specification language to assure sound, long-lasting repairs to concrete structures.

*Architects, owners, developers, specifiers, designers, structural and civil engineers.*

## **>>Concrete Pavement Overlays**

*Craig Hennings, Executive Director, ACPA Southwest*

Length: 4 hours

Credit: 4 Professional Development Hour through the California Nevada Cement Association

If your existing asphalt or concrete pavement is in need of rehabilitation and you need a long life pavement solution, a concrete overlay is your answer. This workshop covers: types of concrete overlays, uses of concrete overlays, determining the best overlay solution for your existing pavement, concrete materials and properties, and construction. The ACPA software StreetPave will be demonstrated and practical examples given.

*Public works officials, engineers, civil engineers*

## **>>Ultrathin Whitetopping**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length: One Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Presents rationale for designing 2" to 4" thick concrete pavement over existing asphalt pavement. Gives design examples based upon existing pavement sections and traffic loadings. Shows examples of construction procedures and completed projects.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Paving Contractors, Inspectors*

## **>>In-Service Evaluation of Ultrathin Whitetopping**

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length One Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Projects in California and Nevada were evaluated using a standard pavement protocol. Projects ranged in age from 13 to 2 years old and were subjected to varying traffic and weather exposures. Results of the survey are discussed and time to decreased service life predicted.

*Architects, Civil Engineers, Construction Managers, Public Works Departments, Paving Contractors, Inspectors*

## Buildings

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### >>Concrete's Contribution to High Performance Buildings

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length One Hour with Q&A

Credit: 1.0 AIA/CES credit through the Portland Cement Association

Reviews the role that portland cement concrete plays in sustainable construction of buildings and infrastructure. Discusses how concrete assists in gaining LEED credits.

*Owners, Developers, Architects, Civil and Structural Engineers*

## Architectural and Decorative

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### >>Art in Concrete

*David J. Akers, P.E., Senior Engineer California Nevada Cement Association*

Length One Hour with Q&A

Credit: 1 Professional Development Hour through the California Nevada Cement Association

Presents options for architectural concrete including white cement, aggregates, form liners, and treatments to create distinctive buildings.

*Owners, Developers, Architects, Civil and Structural Engineers*

### >>Beautiful and Functional Concrete Floors

*Paulette Salisbury, Technical Specialist, California Nevada Cement Association*

Length 1 hour with Q&A

Credit: 1.0 AIA/CES credit through Pacific Southwest Concrete Alliance

Learn ways to utilize a durable, long-lasting concrete slab as a flooring material for commercial, industrial and public spaces. Identify appropriate sealers, treatments and finishes for concrete floors, Learn about stains, pigments, integral colors, stamping and polishing of concrete floors.

*Architects, owners, designers.*

## **>>Sustainable Building Design Using Precast/Prestressed Concrete**

*Doug Mooradian, Executive Director, PCMAC*

Length 1.0 Hour with Q&A

Credit: 1.0 AIA/CES credit through PCI

Introduction into sustainable building design using precast/prestressed concrete with the specific benefits achievable when properly used.

*Owners, Developers, Architects, Civil and Structural Engineers*

## **>>Aesthetic Possibilities and Design Economy Using Precast Concrete**

*Doug Mooradian, Executive Director, PCMAC*

Length 1.0 Hour with Q&A

Credit: 1.0 AIA/CES credit through PCI

How to optimize the use of precast concrete with proper design and good architectural and structural detailing.

*Architects and Developers*

## **>>Designing with Architectural and Structural Precast Concrete**

*Doug Mooradian, Executive Director, PCMAC*

Length 1.0 Hour with Q&A

Credit: 1.0 AIA/CES credit through PCI

Exploring the various building systems available in precast/prestressed concrete along with their use in California.

*Owners, Developers, Architects, Civil and Structural Engineers*

## **Special Applications**

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### **>>Waterproofing Concrete**

*Paulette Salisbury, Technical Specialist, California Nevada Cement Association*

Length 1.0 hr. with Q&A

Credit: 1.0 AIA/CES credit through the Pacific Southwest Concrete Alliance

Identify various systems and products available to produce waterproof concrete members and to provide a water-tight structure. Examples include, slabs on grade, below grade foundations, planter boxes, fountains, decks and tanks. Learn ways to avoid common waterproofing problems.

*Architects, owners, developers, specifiers, designers, engineers.*