ACI's
1984 Annual Convention
March 4-9, 1984
Hyatt Regency Hotel
Phoenix, Arizona

Convention Office Copy
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## ACI Annual Convention

**March 4-9, 1984**  
Phoenix, Arizona

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The ACI staff is eager to answer any questions you may have pertaining to the convention.

The registration desk is open to serve you:

<table>
<thead>
<tr>
<th>Day</th>
<th>March</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>4</td>
<td>1:00 pm- 5:00 pm</td>
</tr>
<tr>
<td>Monday</td>
<td>5</td>
<td>7:00 am- 5:00 pm</td>
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<tr>
<td>Tuesday</td>
<td>6</td>
<td>8:00 am- 5:00 pm</td>
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<tr>
<td>Wednesday</td>
<td>7</td>
<td>7:30 am- 5:00 pm</td>
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<tr>
<td>Thursday</td>
<td>8</td>
<td>8:00 am- 5:00 pm</td>
</tr>
<tr>
<td>Friday</td>
<td>9</td>
<td>8:00 am-10:30 am</td>
</tr>
</tbody>
</table>

**Fees:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Member</td>
<td>$100 (full week)</td>
</tr>
<tr>
<td>Nonmember</td>
<td>$115 (full week)</td>
</tr>
<tr>
<td>One-day Member</td>
<td>$45 (per day)</td>
</tr>
<tr>
<td>One-day Nonmember</td>
<td>$50 (per day)</td>
</tr>
<tr>
<td>Student</td>
<td>Free</td>
</tr>
</tbody>
</table>

Registration fees cover attendance at all ACI technical and educational committee meetings, general session, and forums. Also, the Concrete Mixer ticket is included in the full week registration fee.

For those who plan to attend the following seminar, there is no fee for attendance, but we do request payment for handout material:

Design of Industrial Floors — Handout Material Fee $18.00

**Special Ticketed Events:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Wednesday, March 7, 1984</td>
<td>8:00 am-10:00 am</td>
</tr>
<tr>
<td>Awards Breakfast</td>
<td>Cost $ 8.75</td>
</tr>
<tr>
<td>Thursday, March 8, 1984</td>
<td>6:00 pm-10:00 pm</td>
</tr>
<tr>
<td>Wild West Evening at Rawhide</td>
<td>Cost $30.00</td>
</tr>
<tr>
<td>Friday, March 9, 1984</td>
<td>1:00 pm- 6:00 pm</td>
</tr>
<tr>
<td>Technical Field Trip</td>
<td>Cost $15.00</td>
</tr>
</tbody>
</table>

**NOTE:** Tickets are limited. Please purchase by Tuesday morning!

**Badges**

Wear your badge on the right side at all times. (In shaking hands the eyes normally fall at shoulder level on the right side of the individual being greeted.) The convention badges are color coded for identification.

<table>
<thead>
<tr>
<th>Category</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td>White</td>
</tr>
<tr>
<td>Nonmember</td>
<td>Peach</td>
</tr>
<tr>
<td>Fellow</td>
<td>White</td>
</tr>
<tr>
<td>Student</td>
<td>Blue</td>
</tr>
<tr>
<td>Spouse</td>
<td>Beige</td>
</tr>
</tbody>
</table>
Transportation/Message Center
The Transportation/Message Center is staffed by Complete Travel
Convention and Meeting Service. Should you need any assistance with
your airline travel schedule, please contact them in the registration
area. This desk is open to serve you:

<table>
<thead>
<tr>
<th>Date</th>
<th>Mornings:</th>
<th>Afternoons:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, March 5</td>
<td>8:00 am-11:00 am</td>
<td>12:30 pm-2:30 pm</td>
</tr>
<tr>
<td>Tuesday, March 6</td>
<td>8:00 am-11:00 am</td>
<td>12:30 pm-2:30 pm</td>
</tr>
<tr>
<td>Wednesday, March 7</td>
<td>(am not available)</td>
<td>12:00 pm-3:00 pm</td>
</tr>
<tr>
<td>Thursday, March 8</td>
<td>8:00 am-11:00 am</td>
<td>12:30 pm-2:30 pm</td>
</tr>
<tr>
<td>Friday, March 9</td>
<td>8:00 am-11:00 am</td>
<td>(pm not available)</td>
</tr>
</tbody>
</table>

SUSTAINING MEMBERS OF THE
AMERICAN CONCRETE INSTITUTE

Master Builders
Division of Martin Marietta Corporation
Cleveland, Ohio

Portland Cement Association
Skokie, Illinois

W.R. Grace & Company
Construction Products Division
Cambridge, Massachusetts

Post-Tensioning Institute
Phoenix, Arizona

The Phoenix Corporation
Honolulu, Hawaii
Welcome:

On behalf of the people of Arizona, I would like to extend a warm welcome to the participants of the American Concrete Institute.

This is truly a technological age which we are entering, and it seems clear that one challenge for the 80’s is to effectively address the everchanging needs of our society. The Institute’s objectives, to further engineering and technical education, scientific investigation and research, and development of standards for the design and construction of concrete structures, are important ones. It is my expectation that this convention will be a beneficial learning experience and an excellent forum for the discussion of changes within the industry.

I am hopeful that your program will provide you with the opportunity to get out and explore the beautiful Arizona countryside. You will find our State abounds with natural attractions of all kinds from the highlands of the mountains to vast stretches of desert. The people of Arizona are friendly, warm, and anxious to assist.

May your convention be a great success, and your visit a source of fond memories.

Sincerely,

BRUCE BABBITT
Governor
March 2, 1984

Welcome to Phoenix.

It is my pleasure to extend an official welcome to the American Concrete Institute. Phoenix is proud to be the host city for this year’s National Convention. I am very pleased to say that the City of Phoenix appreciates the American Concrete Institute as a non-profit, scientific and educational society with a high level of service.

While in Phoenix, I hope you have the opportunity to visit our beautiful parks and open spaces, museums and shopping centers. Our wonderful weather, relaxing atmosphere and western hospitality are sure to make your convention a memorable one.

My best wishes for a successful and productive convention.

Sincerely,

Terry Goddard
Mayor
SCHEDULE

Annual Convention

SUNDAY, March 4, 1984
1:00 pm - 5:00 pm Registration Hours
6:30 pm - 8:00 pm Wine & Cheese Party — Sponsored by ACI
Arizona Chapter

MONDAY, March 5, 1984
7:00 am - 5:00 pm Registration Hours
8:30 am - 9:30 pm Administrative, Technical and Educational Committee Meetings

TUESDAY, March 6, 1984
8:00 am - 5:00 pm Registration Hours
8:30 am - 9:30 pm Administrative, Technical and Educational Committee Meetings
9:00 am - 12:00 pm Technical Sessions:
   • Solutions for Placing Quality Concrete: A Question and Answer Session
   • Seminar Progress in Concrete (Part I)
10:00 am - 6:00 pm All Day Film Session
2:00 pm - 5:00 pm Technical Sessions:
   • Structural Distress — A Study in Crack Diagnosis (Part I)
   • Abdun-Nur/Cordon Symposium on Quality Concrete in Construction (Part I)
   • Seminar Progress in Concrete (Part II)
4:30 pm - 6:30 pm 4:30 Rehabilitation (Cash Bar)
5:00 pm - 9:30 pm Student Program

WEDNESDAY, March 7, 1984
7:30 am - 5:00 pm Registration Hours
8:00 am - 10:00 am Awards Breakfast
10:00 am - 12:00 pm General Session
2:00 pm - 5:00 pm Technical Sessions:
   • Research and Development
   • Alternate Methods of Slab Design
   • Structural Distress — A Study in Crack Diagnosis (Part II)
   • Abdun-Nur/Cordon Symposium on Quality Concrete in Construction (Part II)
2:00 pm - 9:30 pm Technical Committee Meetings
4:30 pm - 5:30 pm Slide Demonstration
6:30 pm - 8:00 pm Concrete Mixer (Reception)
THURSDAY, March 8, 1984
8:00 am- 5:00 pm  Registration Hours
8:30 am- 9:30 pm  Technical Committee Meetings
9:00 am-12:00 pm  Technical Sessions:
  • Evaluation of Existing Concrete Buildings: Strength (Part I)
  • Developments in Design for Shear and Torsion (Part I)
  • Anchorage to Concrete (Part I)
  • Seminar: Design of Industrial Floors
2:00 pm- 5:00 pm  Technical Sessions:
  • Evaluation of Existing Concrete Buildings: Strength (Part II)
  • Clinic on Curing of Concrete
  • Developments in Design for Shear and Torsion (Part II)
  • Open Paper Session
6:00 pm-10:00 pm  Wild West Evening at Rawhide
  (cost $30.00)
7:30 pm-10:00 pm  FORUM: Why Use Silica Fume or Ground Slag in Concrete?

FRIDAY, March 9, 1984
8:00 am-10:30 am  Registration Hours
8:30 am-12:30 pm  Technical Committee Meetings
9:00 am-12:00 pm  Technical Sessions:
  • Evaluation of Existing Concrete Buildings: Safety (Part III)
  • Anchorage to Concrete (Part II)
  • Symposium: Deflections of Structures
  • Nondestructive Test Methods for Concrete Strength
1:00 pm- 6:00 pm  Technical Field Trip to:
  (cost $15.00)
  Arizona Major Reclamation Projects
ACI ARIZONA
CHAPTER OFFICERS

President
Russell Schnormeier
City of Phoenix

Vice President
Bill Mackey
Western Technologies

Past President
Harry Roof
Western Ash Company

Secretary-Treasurer
Robert J. Maurer
Phoenix Cement Company

Executive Director
Phil Gutt
Association Managers

Directors
Mike Kohout
Tanner Companies

Jerry Cannon
Jerry Cannon & Associates

Paul Scott
Caruso, Turley & Scott

Dave Cripe
San Xavier Rock & Materials
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Howard B. Pugh, Sr.
Union Rock and Materials Corp.

Assistant Chairman
Russell Schnormeier
City of Phoenix

Assistant Chairman
Dick Stearman
The Tanner Company

Ladies Program
Donald Aldrich
Western Ash Company

Social Activities
Chester W. Miller
Arizona Portland Cement Co.

Transportation
Charles E. Barwood
W. R. Grace Company

Publicity
Paul E. Mueller
Portland Cement Association

Membership Promotion
H. Maynard Blumer
GSAS Architects — Planners

Finance
Robert Maurer
Phoenix Cement Company

Ladies Registration
Richard N. Clark
Master Builders

Technical Field Trip
Patrick L. Neilio
Phoenix Cement Company

Local Technical Program
Edward Magnofich
Western Technologies

Educational Activities
Roy Stegall
Arizona Sand & Rock

Local Technical Program
W. Richard Studeny
Master Builders

Tucson Coordinator
Stanley Turney

The officers, staff, and members of ACI would like to thank the Local Committee, the Hostesses, and the Phoenix Chapter for their part in the 1984 Annual Convention.
SPECIAL EVENTS

PUBLICATION DISPLAY
Sunday through Friday
Atrium
See the latest ACI publications now available. Orders taken at the ACI registration desk.

COFFEE BAR
Monday through Friday
Atrium
8:00 am-10:00 am
Join your colleagues every morning for coffee and tea (complimentary) in the registration area.

4:30 REHABILITATION (Cash Bar)
Tuesday, March 6, 1984
Atrium
4:30 pm-6:30 pm
Rest, relax and restore — the day’s meetings are now behind you and the evening is young. Join your colleagues in the Atrium where a cash bar has been set-up for your pleasure.

AWARDS BREAKFAST
Wednesday, March 7, 1984
Regency C & D
8:00 am-10:00 am
Cost: $8.75
Come meet the awardees. Have fun, enjoy a good breakfast and watch the multi-media awards presentation.

"STRUCTURAL STRENGTH AND SAFETY — THE PROFESSION AT A CROSSROAD"
Wednesday, March 7, 1984
Regency A & B
10:00 am-12:00 pm
During the General Session, our Keynote Speaker is Walter P. Moore, Jr., Ph.D., P.E., President, Walter P. Moore and Associates, Inc., Consulting Engineers and Planners, Houston, Texas will address the topic: "Structural Strength and Safety — The Profession at a Crossroad".

SLIDE DEMONSTRATION
Wednesday, March 7, 1984
Borein A & B
4:30 pm-5:30 pm
A “how to” discussion on the conceptualization planning and final compilation to create a commanding and interesting talk.

CONCRETE MIXER
Wednesday, March 7, 1984
Regency Ballroom
6:30 pm-8:00 pm
All delegates and guests are cordially invited to attend our traditional convention social. (All full-week registrants have received a complimentary concrete mixer ticket upon registration. Others may purchase tickets at the registration desk.)
WILD WEST EVENING AT RAWHIDE
Thursday, March 8, 1984
6:00 pm-10:00 pm
Outside Hotel
Cost: $30.00 (per person)
Take a bus ride with us on Thursday to Rawhide — a recreation of an old wild west town of the 1880s. There will be down home entertainment, good western grub and more! Wear your western outfits and come join us in the fun.
PLEASE PURCHASE TICKETS NO LATER THAN TUESDAY.

TECHNICAL FIELD TRIP —
ACI ARIZONA CHAPTER
Friday, March 9, 1984
1:00 pm-6:00 pm
Outside Hotel
Cost: $15.00
You will tour a portion of the 333 mile $2.7 billion Central Arizona Project. The canals, tunnels, syphons, and pump stations will deliver Colorado River water to Phoenix, scheduled 1985 — and Tucson, scheduled 1991. The project is a key to the future growth of Arizona.
Then, visit Stewart Mountain Dam to learn of its purposes as a water supply source for Phoenix, its construction and operation. Dr. Richard Mielenz has agreed to join us on the tour of Stewart Mountain Dam and to be available to discuss alkali-aggregate reaction as related to his studies of Stewart Mountain Dam in the late 1940's with subsequent work.
PLEASE PURCHASE TICKETS NO LATER THAN TUESDAY.

BREAKFAST MEETINGS (by invitation only)
Tuesday, March 6, 1984 7:00 am  Remington A & B
Technical Chairmen Training
Thursday, March 8, 1984 7:00 am  Regency A
New York Chairmen
Thursday, March 8, 1984 7:00 am  Russell A & B
Shrinkage Compensating Concrete
# PROGRAM COMMITTEE MEETINGS

Be sure to check the bulletin board for last minute changes or added meetings

<table>
<thead>
<tr>
<th>SATURDAY / SUNDAY / MONDAY</th>
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<tbody>
<tr>
<td><strong>DAY / TIME</strong></td>
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<tr>
<td><strong>SATURDAY, MARCH 3, 1984</strong></td>
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<tr>
<td>8:00 am-6:00 pm</td>
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<td><strong>SUNDAY, MARCH 4, 1984</strong></td>
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<td>8:00 am-6:00 pm</td>
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<td>9:00 am-6:00 pm</td>
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<td>2:00 pm-6:00 pm</td>
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<td>6:30 pm-8:00 pm</td>
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<td><strong>MONDAY, MARCH 5, 1984</strong></td>
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<td>8:00 am-1:00 pm</td>
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* Reconvening Meeting
( ) Total Duration of Meeting
### MONDAY

**10:30 am-12:30 pm (continued)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Function</th>
<th>Room</th>
</tr>
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<tbody>
<tr>
<td>*E902-7</td>
<td>Shotcrete Nozzleman</td>
<td>503</td>
</tr>
<tr>
<td>207</td>
<td>Mass Concrete</td>
<td>Phoenix B</td>
</tr>
<tr>
<td>211-5</td>
<td>Evaluation (2 hrs)</td>
<td>Remington C</td>
</tr>
<tr>
<td>211-6</td>
<td>Heavyweight</td>
<td>Room 603</td>
</tr>
<tr>
<td>* 214</td>
<td>Strength Tests</td>
<td>Russell C</td>
</tr>
<tr>
<td>226-2</td>
<td>Slag (2 hrs)</td>
<td>Russell B</td>
</tr>
<tr>
<td>* 228</td>
<td>Nondestructive Testing</td>
<td>Russell A</td>
</tr>
<tr>
<td>332</td>
<td>Residential (2 hrs)</td>
<td>Room 318</td>
</tr>
<tr>
<td>* 344</td>
<td>Circular Prestressed Tanks</td>
<td>Room 327</td>
</tr>
<tr>
<td>*J530</td>
<td>Masonry Structures</td>
<td>Phoenix A</td>
</tr>
<tr>
<td>* 544</td>
<td>Fiber Reinforced</td>
<td>Curtis A</td>
</tr>
<tr>
<td>* 551</td>
<td>Tilt-Up</td>
<td>Curtis B</td>
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**2:00 pm-4:00 pm**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>Publications Committee (2 hrs)</td>
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<td>316</td>
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<tr>
<td>E701</td>
<td>Construction Materials (4 hrs)</td>
<td>Room 322</td>
</tr>
<tr>
<td>E703</td>
<td>Construction Practices (4 hrs)</td>
<td>Room 323</td>
</tr>
<tr>
<td>E901</td>
<td>Scholarships (2 hrs)</td>
<td>Room 319</td>
</tr>
<tr>
<td>E903</td>
<td>Chairmen Training (2 hrs)</td>
<td>Room 334</td>
</tr>
<tr>
<td>211-8</td>
<td>Proportioning with Admixtures (2 hrs)</td>
<td>Remington A</td>
</tr>
<tr>
<td>304</td>
<td>Measuring, Mixing, Trans/Placing</td>
<td>Phoenix B</td>
</tr>
<tr>
<td></td>
<td>(4 hrs)</td>
<td></td>
</tr>
<tr>
<td>318-B</td>
<td>Reinforcement &amp; Development (4 hrs)</td>
<td>Remington C</td>
</tr>
<tr>
<td>318-C</td>
<td>Serviceability &amp; Safety (4 hrs)</td>
<td>Russell A</td>
</tr>
<tr>
<td>318-D</td>
<td>Flexure &amp; Axial Loads (4 hrs)</td>
<td>Russell B</td>
</tr>
<tr>
<td>318-F</td>
<td>Two-Way Slabs (4 hrs)</td>
<td>Russell C</td>
</tr>
<tr>
<td>* 344</td>
<td>Circular Prestressed Tanks</td>
<td>Room 327</td>
</tr>
<tr>
<td>351-2</td>
<td>Rotating &amp; Reciprocating Machinery (4 hrs)</td>
<td>Room 335</td>
</tr>
<tr>
<td>435</td>
<td>Deflection (4 hrs)</td>
<td>Room 503</td>
</tr>
<tr>
<td>439</td>
<td>Steel Reinforcement (4 hrs)</td>
<td>Room 326</td>
</tr>
<tr>
<td>*J530</td>
<td>Masonry Structures</td>
<td>Phoenix A</td>
</tr>
<tr>
<td>* 544</td>
<td>Fiber Reinforced</td>
<td>Curtis A</td>
</tr>
<tr>
<td>* 551</td>
<td>Tilt-Up</td>
<td>Curtis B</td>
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**4:00 pm-6:00 pm**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>International Activities Comm. (2 hrs)</td>
<td></td>
<td>316</td>
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<tr>
<td>Membership Committee (2 hrs)</td>
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<td>319</td>
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<tr>
<td>TAC Task Group on Computers (2 hrs)</td>
<td></td>
<td>Remington A</td>
</tr>
<tr>
<td>*E701</td>
<td>Construction Materials</td>
<td>Room 322</td>
</tr>
<tr>
<td>*E703</td>
<td>Construction Practices</td>
<td>Room 323</td>
</tr>
<tr>
<td>201</td>
<td>Durability (2 hrs)</td>
<td>Curtis A</td>
</tr>
<tr>
<td>223</td>
<td>Expansive Cement (2 hrs)</td>
<td>Room 334</td>
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<tr>
<td>226-1</td>
<td>Fly Ash (2 hrs)</td>
<td>Room 603</td>
</tr>
<tr>
<td>* 304</td>
<td>Measuring, Mixing, Trans/Placing</td>
<td>Phoenix B</td>
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<tr>
<td>* 318-B</td>
<td>Reinforcement &amp; Development</td>
<td>Remington C</td>
</tr>
<tr>
<td>* 318-C</td>
<td>Serviceability &amp; Safety</td>
<td>Russell A</td>
</tr>
<tr>
<td>* 318-D</td>
<td>Flexure &amp; Axial Loads</td>
<td>Russell B</td>
</tr>
<tr>
<td>* 318-F</td>
<td>Two-Way Slabs</td>
<td>Russell C</td>
</tr>
<tr>
<td>* 344</td>
<td>Circular Prestressed Tanks</td>
<td>Room 327</td>
</tr>
<tr>
<td>* 351-2</td>
<td>Rotating &amp; Reciprocating Machinery</td>
<td>Room 335</td>
</tr>
<tr>
<td>* 435</td>
<td>Deflection</td>
<td>Room 503</td>
</tr>
<tr>
<td>* 439</td>
<td>Steel Reinforcement</td>
<td>Room 326</td>
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<tr>
<td>523</td>
<td>Insulating &amp; Cellular (2 hrs)</td>
<td>Room 318</td>
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* Reconvening Meeting

( ) Total Duration of Meeting
### MONDAY/TUESDAY

<table>
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<tr>
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<th>FUNCTION</th>
<th>ROOM</th>
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<tbody>
<tr>
<td>4:00 pm-6:00 pm</td>
<td>* J530 Masonry Structures (cont. Tues.)</td>
<td>Phoenix A</td>
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<tr>
<td></td>
<td>* 551 Tilt-Up</td>
<td>Curtis B</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>* E801 Student Concrete Practices (2 hrs)</td>
<td>Remington B</td>
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<td>* 544 Fiber Reinforced</td>
<td>Curtis A</td>
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<tr>
<td></td>
<td>554-C Task Group (2 hrs)</td>
<td>Russell B</td>
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### TUESDAY, MARCH 6, 1984

#### 8:30 am-10:30 am

<table>
<thead>
<tr>
<th>FUNCTION</th>
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<tbody>
<tr>
<td>Specifications (2 hrs)</td>
<td>Room 316</td>
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<tr>
<td>E902 Certification (4 hrs)</td>
<td>Remington C</td>
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<tr>
<td>117 Tolerances (4 hrs)</td>
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<tr>
<td>212 Chemical Admixtures (2 hrs)</td>
<td>Curtis A</td>
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<tr>
<td>222 Corrosion (2 hrs)</td>
<td>Room 318</td>
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<tr>
<td>303 Architectural (4 hrs)</td>
<td>Room 503</td>
</tr>
<tr>
<td>315 Detailing of Reinforcement (4 hrs)</td>
<td>Room 603</td>
</tr>
<tr>
<td>318-A General Concrete &amp; Construction (4 hrs)</td>
<td>Russell A</td>
</tr>
<tr>
<td>318-E Shear &amp; Torsion (4 hrs)</td>
<td>Russell B</td>
</tr>
<tr>
<td>318-G Prestressed Precast (4 hrs)</td>
<td>Room 326</td>
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<tr>
<td>318-H Seismic Provisions (4 hrs)</td>
<td>Room 326</td>
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<tr>
<td>340 Strength Design Handbook (6 hrs)</td>
<td>Room 322</td>
</tr>
<tr>
<td>351-3 Static Equipment (4 hrs)</td>
<td>Room 319</td>
</tr>
<tr>
<td>363 High Strength (4 hrs)</td>
<td>Room 327</td>
</tr>
<tr>
<td>* J530 Masonry Structures</td>
<td>Russell C</td>
</tr>
<tr>
<td>547 Refractory (8 hrs)</td>
<td>Room 323</td>
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#### 9:00 am-12:00 pm

- Solutions for Placing Quality Concrete:
  - A Question & Answer Session | Regency C
  - Seminar: Progress in Concrete (Part I) | Phoenix A & B

#### 9:00 am-6:00 pm

- Board of Direction (old) | Curtis B
- 10:00 am-6:00 pm
  - All Day Film Session | Regency B

#### 10:30 am-12:30 pm

<table>
<thead>
<tr>
<th>FUNCTION</th>
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<tbody>
<tr>
<td>* E902 Certification</td>
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<td>* 117 Tolerances</td>
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<td>213 Lightweight Aggregates (2 hrs)</td>
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<tr>
<td>221 Aggregates (2 hrs)</td>
<td>Room 318</td>
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<tr>
<td>226-3 Silica Fume (2 hrs)</td>
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<tr>
<td>* 303 Architectural</td>
<td>Room 503</td>
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<tr>
<td>* 315 Detailing of Reinforcement</td>
<td>Room 603</td>
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<tr>
<td>* 318-A General Concrete &amp; Construction</td>
<td>Russell A</td>
</tr>
<tr>
<td>* 318-E Shear &amp; Torsion</td>
<td>Russell B</td>
</tr>
<tr>
<td>* 318-G Prestressed Precast</td>
<td>Room 334</td>
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<tr>
<td>* 318-H Seismic Provisions</td>
<td>Room 326</td>
</tr>
<tr>
<td>* 340 Strength Design Handbook</td>
<td>Room 322</td>
</tr>
<tr>
<td>* 351-3 Static Equipment</td>
<td>Room 319</td>
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</table>

* Reconvening Meeting
( ) Total Duration of Meeting
10:30 am-12:30 pm (continued)

* 363 High Strength
* J530 Masonry Structures
* 547 Refractory

2:00 pm-4:00 pm

209 Creep & Shrinkage (2 hrs) Room 319
210 Erosion in Hydraulic Structures (2 hrs) Room 335
302 Construction of Floors (6 hrs) Russell B
318 Standard Building Code (4 hrs) Remington A & B
* 340 Strength Design Handbook Room 322
345-Sub Subcommittee (4 hrs) Room 334
351 Foundations (Equipment) (4 hrs) Remington C
437 Strength of Structures (4 hrs) Room 318
503 Adhesives (4 hrs) Room 327
517 Accelerated Curing (4 hrs) Room 603
* J530 Masonry Structures Russell C
533 Wall Panels (2 hrs) Room 503
* 547 Refractory Room 323
554 Bearing Systems (4 hrs) Room 326

2:00 pm-5:00 pm

Structural Distress - A Study in Crack Diagnosis (Part I) Regency D
Abdun-Nur/Cordon Symposium on Quality Concrete in Construction (Part I) Regency C
Seminar: Progress in Concrete (Part II) Phoenix A & B

4:00 pm-6:00 pm

*Educational Activities Committee Russell A
122 Energy Conservation (2 hrs) Room 322
123 Research (2 hrs) Room 319
211-4 Editorial (2 hrs) Room 316
* 302 Construction of Floors Russell B
* 318 Standard Building Code Remington A & B
330 Parking Lots (2 hrs) Room 503
* 345-Sub Subcommittee Room 334
* 351 Foundations (Equipment) Remington C
355 Anchorage (4 hrs) Curtis A
* 437 Strength of Structures Room 318
* 503 Adhesives Room 327
* 517 Accelerated Curing Room 603
* J530 Masonry Structures Russell C
* 547 Refractory Room 323
549 Ferrocement (2 hrs) Room 335
* 554 Bearing Systems Room 326

4:30 pm-6:30 pm

4:30 Rehabilitation (Cash Bar) Atrium

5:00 pm-9:30 pm

Student Program Regency A

* Reconvening Meeting
() Total Duration of Meeting
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<tr>
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<tr>
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<td>Fatigue (2 hrs)</td>
<td>Russell A</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>Radioactive Waste Management (2 hrs)</td>
<td>Russell C</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>Construction of Floors</td>
<td>Russell B</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>Anchorage</td>
<td>Curtis A</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>Slabs (2 hrs)</td>
<td>Remington C</td>
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**WEDNESDAY, MARCH 7, 1984**

**8:00 am-10:00 am**
- Awards Breakfast  
  Regency C & D

**8:30 am-10:30 am**
- Cold Weather (4 hrs)
  Remington C
- Formwork (8 hrs)
  Russell B
- Design of Slabs on Grade (4 hrs)
  Room 327
- J445 Shear & Torsion (4 hrs)
  Room 316
- 506 Shotcreting (6 hrs)
  Room 318
- 531 Concrete Masonry Structures (8 hrs)
  Room 326

**10:00 am-12:00 pm**
- General Session
  Regency A & B

**10:30 am-12:30 pm**
- SRC-81 (2 hrs)
  Russell A
- Cold Weather
  Remington C
- Formwork
  Russell B
- Design of Slabs on Grade
  Room 327
- J445 Shear & Torsion
  Room 316
- 506 Shotcreting
  Room 318
- 531 Concrete Masonry Structures
  Room 326

**1:00 pm-5:00 pm**
- Convention Committee (4 hrs)
  Remington A

**2:00 pm-4:00 pm**
- Planning Committee (4 hrs)
  Remington B
- Notation & Nomenclature (4 hrs)
  Room 503
- Proportioning (2 hrs)
  Curtis A
- Structural Specifications (4 hrs)
  Russell A
- Bridge Construction (4 hrs)
  Room 327
- Formwork
  Russell B
- Safety (4 hrs)
  Russell C
- General, Materials Construction (4 hrs)
  Room 316
- Design (4 hrs)
  Room 319
- Reinforcement & Steel (4 hrs)
  Room 322
- Special Provisions (4 hrs)
  Room 323
- Offshore Structures (4 hrs)
  Room 335
- Prestressed (4 hrs)
  Room 603
- Lateral Forces (4 hrs)
  Curtis B
- 506 Shotcreting
  Room 318
- 531 Concrete Masonry Structures
  Room 326
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<th>DAY / TIME</th>
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<tr>
<td>2:00 pm-5:00 pm</td>
<td>- Research &amp; Development</td>
<td>Phoenix A &amp; B</td>
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<td></td>
<td>- Alternate Methods of Slab Design</td>
<td>Regency B</td>
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<tr>
<td></td>
<td>- Abdun-Nur/Cordon Symposium on Quality Concrete in Construction (Part II)</td>
<td>Regency C</td>
</tr>
<tr>
<td></td>
<td>- Structural Distress - A Study in Crack Diagnosis (Part II)</td>
<td>Regency D</td>
</tr>
<tr>
<td>4:00 pm-6:00 pm</td>
<td>* Planning Committee</td>
<td>Remington B</td>
</tr>
<tr>
<td></td>
<td>* Standards Board (2 hrs)</td>
<td>Remington C</td>
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<tr>
<td></td>
<td>* 116 Notation &amp; Nomenclatures</td>
<td>Room 503</td>
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<tr>
<td></td>
<td>* 301 Structural Specifications</td>
<td>Russell A</td>
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<td></td>
<td>* 345 Bridge Construction</td>
<td>Room 327</td>
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<tr>
<td></td>
<td>* 347 Formwork</td>
<td>Russell B</td>
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<tr>
<td></td>
<td>* 348 Safety</td>
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<tr>
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<td>* 349-1 General, Materials Construction</td>
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<td>* 349-2 Design</td>
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<td>* 349-3 Reinforcement &amp; Steel</td>
<td>Room 322</td>
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<td></td>
<td>* 349-4 Special Provisions</td>
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<td></td>
<td>* 357 Offshore Structures</td>
<td>Room 335</td>
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<td>* J423 Prestressed</td>
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<td>* J442 Lateral Forces</td>
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<td></td>
<td>* 531 Concrete Masonry Structures</td>
<td>Room 326</td>
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<tr>
<td>4:30 pm-5:30 pm</td>
<td>- Slide Demonstration</td>
<td>Borein A &amp; B</td>
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<tr>
<td>6:30 pm-8:00 pm</td>
<td>- Concrete Mixer</td>
<td>Regency Ballroom</td>
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<tr>
<td>7:30 pm-9:30 pm</td>
<td>444 Models of Structures (2 hrs)</td>
<td>Remington A</td>
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**THURSDAY, MARCH 8, 1984**

| 8:30 am-10:30 am | Chapter Activities Committee (4 hrs)                                      | Remington A |
|                 | Institute & Industry Advancement (2 hrs)                                  | Room 316   |
| 225-1           | Math. Modeling/Cement (2 hrs)                                             | Room 322   |
| 307             | Chimneys (8 hrs)                                                          | Remington C |
| 308             | Curing (4 hrs)                                                            | Remington B |
| 311             | Inspection (4 hrs)                                                        | Russell C  |
| 313             | Bins & Silos (8 hrs)                                                      | Room 326   |
| 325             | Pavements (4 hrs)                                                         | Curtis A   |
| 358             | Guideways (8 hrs)                                                         | Room 319   |
| 362             | Parking Structures (4 hrs)                                                | Room 323   |
| 408             | Bond & Development of Reinforcement (4 hrs)                               | Room 327   |
| 548             | Polymers (4 hrs)                                                          | Curtis B   |
| J550            | Precast Structural (4 hrs)                                                | Room 334   |
| 553             | Swimming Pools (4 hrs)                                                    | Room 318   |

* Reconvening Meeting
( ) Total Duration of Meeting
<table>
<thead>
<tr>
<th>Time</th>
<th>Function</th>
<th>Room</th>
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<tbody>
<tr>
<td>9:00 am-12:00 pm</td>
<td>Evaluation of Existing</td>
<td>Regency C</td>
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<td>Concrete Buildings: Strength (Part I)</td>
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<td>Developments in Design for Shear &amp; Torsion (Part I)</td>
<td>Regency D</td>
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<td>Anchorage to Concrete (Part I)</td>
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<td>Seminar: Design of Industrial Floors</td>
<td>Regency A</td>
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<td>10:30 am-12:30 pm</td>
<td>* Chapter Activities Committee</td>
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<td>Fire Resistance (2 hrs)</td>
<td>Russell B</td>
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<td>Fly Ash, Slag, etc. (2 hrs)</td>
<td>Phoenix A</td>
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<td>* 307 Chimneys (cont. Fri.)</td>
<td>Remington C</td>
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<tr>
<td></td>
<td>* 308 Curing</td>
<td>Remington B</td>
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<td></td>
<td>* 311 Inspection</td>
<td>Russell C</td>
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<tr>
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<td>* 313 Bins &amp; Silos</td>
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<td>* 325 Pavements</td>
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<td>* 358 Guideways</td>
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<td>* 362 Parking Structures</td>
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<td>* 408 Bond &amp; Development Reinforcement</td>
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<td>442-Sub Inelastic Response</td>
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<td>* 548 Polymers</td>
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<td>* 550 Precast Structural</td>
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<tr>
<td></td>
<td>* 553 Swimming Pools</td>
<td>Room 318</td>
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<tr>
<td>1:00 pm-4:00 pm</td>
<td>121 Quality Assurance (4 hrs)</td>
<td>Russell A</td>
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<tr>
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<td>224 Cracking (4 hrs)</td>
<td>Room 318</td>
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<tr>
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<td>225 Hydraulic Cements (4 hrs)</td>
<td>Room 327</td>
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<tr>
<td></td>
<td>* 313 Bins &amp; Silos</td>
<td>Room 326</td>
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<tr>
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<td>346 Cast-in-Place Pipe (4 hrs)</td>
<td>Russell C</td>
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<tr>
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<td>349 Nuclear Structures (4 hrs)</td>
<td>Remington A</td>
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<tr>
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<td>350 Sanitary Engineering Structures (4 hrs)</td>
<td>Russell B</td>
</tr>
<tr>
<td></td>
<td>* 352 Joints (4 hrs)</td>
<td>Room 322</td>
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<tr>
<td></td>
<td>* 358 Guideways</td>
<td>Room 319</td>
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<tr>
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<td>504 Joint Sealants (4 hrs)</td>
<td>Phoenix A</td>
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<td>546 Repair (4 hrs)</td>
<td>Room 318</td>
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<tr>
<td>2:00 pm-5:00 pm</td>
<td>Evaluation of Existing</td>
<td>Regency C</td>
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<td>Concrete Buildings: Strength (Part II)</td>
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<td>Clinic on Curing of Concrete</td>
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<td>Developments in Design for Shear &amp; Torsion (Part II)</td>
<td>Regency D</td>
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<tr>
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<td>Open Paper Session</td>
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<tr>
<td>2:00 pm-6:00 pm</td>
<td>Board of Direction (new)</td>
<td>Curtis B</td>
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<tr>
<td>4:00 pm-6:00 pm</td>
<td>* 121 Quality Assurance</td>
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<td>* 224 Cracking</td>
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<td>* 313 Bins &amp; Silos</td>
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<td>* 346 Cast-in-Place Pipe</td>
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<td>DAY / TIME</td>
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<td>* 349</td>
<td>Nuclear Structures</td>
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<td>Sanitary Engineering Structures</td>
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<tr>
<td>* 352</td>
<td>Joints</td>
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<tr>
<td>* 358</td>
<td>Guideways</td>
<td>Room 319</td>
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<tr>
<td>* 504</td>
<td>Joint Sealants</td>
<td>Phoenix A</td>
</tr>
<tr>
<td>* 546</td>
<td>Repair</td>
<td>Remington C</td>
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| | FUNCTION | ROOM |
| 7:30 pm-10:00 pm | | |
| — Forum: Why Use Silica Fume or Ground Slag in Concrete? | Regency C |
| 364 | Rehabilitation (2.5 hrs) | Remington C |

**FRIDAY, MARCH 9, 1984**

<table>
<thead>
<tr>
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<th>FUNCTION</th>
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<tbody>
<tr>
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<tr>
<td>E902-5</td>
<td>Concrete Inspector - Nuclear (4 hrs)</td>
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<tr>
<td>118</td>
<td>Computers (4 hrs)</td>
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<tr>
<td>* 307</td>
<td>Chimneys</td>
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<tr>
<td>309</td>
<td>Consolidation (4 hrs)</td>
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<td>336</td>
<td>Footings (2 hrs)</td>
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<tr>
<td>532</td>
<td>Concrete Masonry (2 hrs)</td>
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</tr>
<tr>
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<td>Remington A</td>
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| 9:00 am-12:00 pm | |
| — Evaluation of Existing Concrete Buildings: Safety (Part III) | Regency C |
| — Anchorage to Concrete (Part II) | Regency B |
| — Symposium: Deflections of Structures | Regency A |
| — Nondestructive Test Methods for Concrete Strength | Regency D |

| 10:30 am-12:30 pm | |
| * E902-5 | Certification Inspector - Nuclear |
| * 118 | Computers |
| * 307 | Chimneys |
| * 309 | Consolidation |
| | Russell C |
| | Russell A |
| | Remington C |
| | Russell B |
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ALBERT J. GOUWENS
EDWIN G. HEDSTROM
SAM N. HODGES, JR.
DOV KAMINETZKY
R. W. KRINER
CHARLES F. SCHOLER

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RAYMOND J. SCHUTZ, Chairman
ANN K. BRUTTELL, Secretary*
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EDWIN A. DECKER
JOHN M. HANSON
DANIEL P. JENNY
EDWARD L. KAWALA
WILLIAM P. LILJESTROM
WILLIAM C. MOORE
THOMAS J. PASKO, JR.
CLAUDE B. TRUSTY, JR.
JOHN T. VAN DEURZEN

*American Concrete Institute
P.O. Box 19150
Detroit, Michigan 48219
<table>
<thead>
<tr>
<th>TIME</th>
<th>FILM</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 am</td>
<td>&quot;The Total Floor System/ Restoration Techniques&quot;</td>
</tr>
<tr>
<td></td>
<td>Source: Master Builders</td>
</tr>
<tr>
<td>10:20 am</td>
<td>&quot;The 1976 Tangshan, China Earthquake&quot;</td>
</tr>
<tr>
<td></td>
<td>Source: State Seismological Bureau of the People's Republic of China</td>
</tr>
<tr>
<td>10:50 am</td>
<td>&quot;A Fitting Occupation&quot; (Mechanical Engineering)</td>
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<td></td>
<td>Source: The American Society of Mechanical Engineers</td>
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<tr>
<td>11:20 am</td>
<td>&quot;Water Reducing Admixtures For Concrete&quot;</td>
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<tr>
<td></td>
<td>Source: Master Builders</td>
</tr>
<tr>
<td>11:40 am</td>
<td>&quot;Seikan Under-Sea Tunnel&quot;</td>
</tr>
<tr>
<td></td>
<td>Source: Japanese Concrete Institute</td>
</tr>
<tr>
<td>12:40 pm</td>
<td>&quot;Air Entrainment For Concrete&quot;</td>
</tr>
<tr>
<td></td>
<td>Source: Master Builders</td>
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<tr>
<td>1:00 pm</td>
<td>&quot;Construction of the CN Tower in Toronto&quot;</td>
</tr>
<tr>
<td></td>
<td>Source: CN Tower, Toronto, Ont., Canada</td>
</tr>
<tr>
<td>5:00-6:00 pm</td>
<td>Open for Film Requests</td>
</tr>
</tbody>
</table>
TUESDAY, March 6, 1984
5:00 pm-9:30 pm
Room: Regency A

STUDENT PROGRAM
Sponsored by ACI Committee E-801

Session Chairman: R. John Craig
Associate Professor
Department of Civil and
Environmental Engineering
New Jersey Institute of Technology
Newark, New Jersey

Session Moderator: Luke M. Snell
Associate Professor of Construction
Southern Illinois University
Edwardsville, Illinois

This program has three main goals:
1. Create student interest and familiarity with ACI
2. Stimulate some interest in working concrete projects at both the undergraduate and graduate levels
3. Show students some of the existing careers in concrete construction and design

The program is geared for the following:
1. Students—undergraduate and graduate
2. General members of ACI
3. Those interested in Committee E-801 activities

PROGRAM
5:00 pm Forney/ACI Cube Strength Contest
7:30 pm Student Concrete Projects
R. John Craig, Chairman, E-801 Committee

Careers Related to Concrete Construction and Design
Dennis Smith, Rocky Mountain Ash Company,
Englewood, Colorado

Modeling of Precast Concrete Structures
Harry Harris, Professor, Civil Engineering Department
Drexel University, Philadelphia, Pennsylvania

Presentation of Papers by Students

Social Hour
TUESDAY, March 6, 1984
9:00 am-12:00 pm

SOLUTIONS FOR PLACING QUALITY CONCRETE:
A QUESTION AND ANSWER SESSION
Sponsored by ACI TAC AdHoc Committee

Session Chairman: Paul H. Sommers
Chief Engineer
Algernon Blair, Inc.
Montgomery, Alabama

Panelists:
Dean E. Stephan, Jr.
Charles Pankow, Inc.
Altadena, California
Richard Meininger
National Ready-Mix Concrete Association
Silver Springs, Maryland
Edward J. Hyland
Consultant
Skokie, Illinois
Oswin Keifer, Jr.
North Pacific Division
Corps of Engineers
Portland, Oregon
James L. Cope
President
Morgen Manufacturing Company
Yankton, South Dakota

Donald L. Schlegel
Manager
Price Brothers Company
Dayton, Ohio
Leo P. Flibotte
Vice President — Operations
Barker Steel Company, Inc.
Medford, Massachusetts
Richard D. Gaynor
National Ready-Mix Concrete Association
Silver Spring, Maryland
Clarkson W. Pinkham
S. B. Barnes and Associates
Los Angeles, California
William C. Black
Consulting Structural Engineer
Bethlehem, Pennsylvania

A panel made up of Engineers, Contractors and Manufacturers eminent in the field of quality concrete who will share their expertise in answering the many perplexing questions that arise in producing and placing economical quality concrete. Each panelist will give a short commentary on problems, in their field, that presently confront the concrete industry, and how best they can be solved. Questions and comments from the audience are welcomed to obtain the full benefit of this session.
TUESDAY, March 6, 1984
9:00 am-12:00 pm
Room: Phoenix A & B

SEMINAR: PROGRESS IN CONCRETE
(PART I)
Sponsored by ACI Arizona Chapter

Seminar Chairman: Edward Mangotich
Principal
Western Technologies, Inc.
Phoenix, Arizona

CONCRETE MATERIALS — TECHNOLOGY
Use of 14 Day Compressive Strength Tests in Lieu of 28 Day Tests for Acceptance
Chetan Date, Faculty Associate, Arizona State University, Tempe, Arizona; Russell Schnormeier, Engineering Supervisor, City of Phoenix, Phoenix, Arizona

Nature and Effects of Carbon in Fly Ash on Properties of Fly Ash Concrete
Sidney Diamond, Professor of Civil Engineering, Purdue University, West Lafayette, Indiana

Use of Petrographic Techniques in the Determination of Fly Ash Content in Hardened Concrete
Robert C. O'Neill, Petrographer, Micro-Chem Laboratories, San Jose, California; Robert M. Kumagai, Chemist, Micro-Chem Laboratories, San Jose, California

Production and Use of Flowable Concrete in Arizona
Richard N. Clark, Metro Manager-Arizona, Master Builders, Phoenix, Arizona

Status of Arizona Technician Certification Program
Patrick Neillo, Technical Service Manager, Phoenix Cement Company, Phoenix, Arizona; Michael Kohout, Director of Technical Services, Central Arizona Region, The Tanner Companies, Phoenix, Arizona

Please Note: Part II will be presented on Tuesday, March 6, 2:00 pm - 5:00 pm in Phoenix A & B room.
TECHNICAL SESSION

TUESDAY, March 6, 1984
2:00 pm-5:00 pm

Room: Regency D

STRUCTURAL DISTRESS — A STUDY IN CRACK DIAGNOSIS (PART I)
Sponsored by ACI Committees 222, 224, 408 and 445

Session Chairman: David Darwin
Professor of Civil Engineering
University of Kansas
Lawrence, Kansas

Session Co-Chairman: LeRoy A. Lutz
Vice President
Computerized Structural Design, Inc.
Milwaukee, Wisconsin

Key Note — Investigation of Distress in Concrete Structures
Boris Bresler, Principal, Wiss, Janney, Elstner Associates, Inc., Emeryville, California

Tools for Crack Evaluation
Nicholas J. Carino, Research Civil Engineer, National Bureau of Standards, Washington, D.C.

Causes and Remedies of Distress — Three Case Histories
Paul Zia, Professor of Civil Engineering and Department Head, North Carolina State University, Raleigh, North Carolina

The Analysis of Cracked Concrete and Corrosion
John P. Lloyd, Professor, Oklahoma State University, Stillwater, Oklahoma; Robert H. Heidersbach, Professor, Oklahoma State University, Stillwater, Oklahoma

An Investigation of Cracked and Deteriorated Concrete Floor Slabs
Stephen J. Sopko, Associate, Ryan-Biggs Associates, Troy, New York

Please Note: Part II will be presented on Wednesday, March 7, 2:00 pm - 5:00 pm in Regency D room.

NOTE: Technical Sessions continue on page 33
**Personal Log**  
1984 Annual Convention

Delegate's Name

**Sunday, March 4, 1984**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00 a.m.</td>
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<tr>
<td>1:00 p.m.</td>
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<tr>
<td>1:00 p.m.</td>
<td>Registration Hours</td>
<td>Atrium</td>
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<tr>
<td>5:00 p.m.</td>
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<tr>
<td>6:30 p.m.</td>
<td>Wine &amp; Cheese Party</td>
<td>Regency A &amp; B</td>
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<td>8:00 p.m.</td>
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**Monday, March 5, 1984**

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<thead>
<tr>
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<tr>
<td>7:00 a.m.</td>
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<td>8:30 a.m.</td>
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<td>8:30 a.m.</td>
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<td>10:30 a.m.</td>
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<tr>
<td>10:30 a.m.</td>
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<tr>
<td>12:30 p.m.</td>
<td>Lunch Break</td>
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<td>12:30 p.m.</td>
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<td>2:00 p.m.</td>
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<td>4:00 p.m.</td>
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</table>
**Tuesday, March 6, 1984**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<td>7:00 a.m.</td>
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<td>8:30 a.m.</td>
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<td>8:30 a.m.</td>
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<tr>
<td>10:30 a.m.</td>
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<tr>
<td>9:00 a.m.</td>
<td><strong>Sessions:</strong></td>
<td>Regency C</td>
</tr>
<tr>
<td>12:00 noon</td>
<td>Placing Quality Concrete</td>
<td></td>
</tr>
<tr>
<td>12:30 p.m.</td>
<td>Seminar: Progress in Concrete (I)</td>
<td>Phoenix A &amp; B</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>All Day Film Session</td>
<td>Regency B</td>
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<tr>
<td>6:00 p.m.</td>
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<tr>
<td>10:30 a.m.</td>
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<td>12:30 p.m.</td>
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<tr>
<td>12:30 p.m.</td>
<td>Lunch Break</td>
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<td>2:00 p.m.</td>
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<td>2:00 p.m.</td>
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<tr>
<td>2:00 p.m.</td>
<td><strong>Sessions:</strong></td>
<td>Regency D</td>
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<tr>
<td>5:00 p.m.</td>
<td>Structural Distress</td>
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<tr>
<td>5:00 p.m.</td>
<td>Abdun: Nuser: Cordon Symposium (I)</td>
<td>Regency C</td>
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<tr>
<td>4:00 p.m.</td>
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<td>4:00 p.m.</td>
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<tr>
<td>4:00 p.m.</td>
<td><strong>Sessions:</strong></td>
<td>Regency A</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td>Progress in Concrete (II)</td>
<td>Phoenix A &amp; B</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>4:30 Rehabilitation (Cash Bar)</td>
<td>Atrium</td>
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<td>6:00 p.m.</td>
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<td>6:00 p.m.</td>
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<td>7:30 p.m.</td>
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<td>7:30 p.m.</td>
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**Wednesday, March 7, 1984**

<table>
<thead>
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<tr>
<td>10:00 a.m.</td>
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<td>Regency C &amp; D</td>
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<td>8:30 a.m.</td>
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<tr>
<td>10:30 p.m.</td>
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* (Please purchase tickets in advance)
### Wednesday, March 7, 1984 (continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>10:00 a.m.</td>
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<tr>
<td>12:00 p.m.</td>
<td>General Session</td>
<td>Regency A &amp; B</td>
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<td>10:30 a.m.</td>
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<td>12:30 p.m.</td>
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<tr>
<td>12:30 p.m.</td>
<td>Lunch Break</td>
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<td>2:00 p.m.</td>
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<tr>
<td>2:00 p.m.</td>
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<tr>
<td>5:00 p.m.</td>
<td><strong>Sessions:</strong></td>
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<tr>
<td></td>
<td>Research &amp; Development</td>
<td>Phoenix A &amp; B</td>
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<tr>
<td></td>
<td>Alternate Methods of Slab Design</td>
<td>Regency B</td>
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<tr>
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<td>Structural Distress (II)</td>
<td>Regency D</td>
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<td></td>
<td>Abdun-Nur/Cordon Symposium (II)</td>
<td>Regency C</td>
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<tr>
<td>4:00 p.m.</td>
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<tr>
<td>4:30 p.m.</td>
<td>Slide Demonstration</td>
<td>Borein A &amp; B</td>
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<td>6:30 p.m.</td>
<td>Concrete Mixer</td>
<td>Regency Ballroom</td>
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<td>8:00 p.m.</td>
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<td>7:30 p.m.</td>
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### Thursday, March 8, 1984

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<tr>
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<tr>
<td>10:30 a.m.</td>
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<tr>
<td>9:00 a.m.</td>
<td><strong>Sessions:</strong></td>
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<tr>
<td></td>
<td>Concrete Buildings: Strength (I)</td>
<td>Regency C</td>
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<tr>
<td></td>
<td>Design for Shear &amp; Torsion (I)</td>
<td>Regency D</td>
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<tr>
<td></td>
<td>Anchorage to Concrete (I)</td>
<td>Regency B</td>
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<tr>
<td></td>
<td>Seminar: Industrial Floors</td>
<td>Regency A</td>
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<tr>
<td>10:30 a.m.</td>
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<tr>
<td>12:30 p.m.</td>
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<tr>
<td>12:30 p.m.</td>
<td>Lunch Break</td>
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<tr>
<td>Time</td>
<td>Session</td>
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<tr>
<td>2:00 p.m.</td>
<td>Sessions:</td>
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<td></td>
<td>Concrete Buildings: Strength (II)</td>
<td>Regency C</td>
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<tr>
<td></td>
<td>Clinic: Curing of Concrete</td>
<td>Regency B</td>
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<td></td>
<td>Design for Shear &amp; Torsion (II)</td>
<td>Regency D</td>
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<td></td>
<td>Open Paper Session</td>
<td>Regency A</td>
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**Friday, March 9, 1984**

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 a.m.</td>
<td>Session, Introductions</td>
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<tr>
<td>8:30 a.m.</td>
<td>Sessions:</td>
<td></td>
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<tr>
<td></td>
<td>Concrete Buildings: Safety (III)</td>
<td>Regency C</td>
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<tr>
<td></td>
<td>Anchorage to Concrete (II)</td>
<td>Regency B</td>
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<td></td>
<td>Deflections of Structures</td>
<td>Regency A</td>
</tr>
<tr>
<td></td>
<td>Nondestructive Test Methods/Strength</td>
<td>Regency D</td>
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<thead>
<tr>
<th>Time</th>
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<th>Location</th>
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<tbody>
<tr>
<td>9:00 p.m.</td>
<td>Technical Field Trip</td>
<td>Outside Hotel</td>
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**Please Note Special Ticketed Events**

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<th>Date</th>
<th>Event</th>
<th>Time</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Wednesday, March 7, 1984</td>
<td>Awards Breakfast</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>$8.75</td>
</tr>
<tr>
<td>Thursday, March 8, 1984</td>
<td>Evening at Rawhide</td>
<td>6:00 p.m. - 10:00 p.m.</td>
<td>$30.00</td>
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<tr>
<td>Friday, March 9, 1984</td>
<td>Technical Field Trip</td>
<td>1:00 p.m. - 6:00 p.m.</td>
<td>$15.00</td>
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</table>

All convention delegates are invited to participate in these events. Tickets are limited. Please purchase tickets by Tuesday, March 6.
ABDUN-NUR/CORDON SYMPOSIUM ON QUALITY CONCRETE IN CONSTRUCTION (PART I)
Sponsored by ACI Committee 214

Symposium Chairman: V.M. Malhotra
Head of Construction Materials Section
CANMET/EMR
Ottawa, Ontario
CANADA

Introduction
R.C. Mielenz, Geologist and Petrographer, Gates Mills, Ohio

Men Who Made It Happen
J. Derle Thorpe, Director - Structural Materials, Utah State University,
Logan, Utah

How to Get Quality in Concrete Construction: What Matters — What Does Not!
Lewis H. Tuthill, Concrete Engineer, Consultant, Sacramento,
California

Selecting Relevant Levels of Quality
Bryant Mather, Chief of Structures Laboratory, U.S. Army Engineer
Waterways Experiment Station, Vicksburg, Mississippi

Achieving Common Quality in Concrete Construction Throughout the World
Ken Newman, Director General, British Ready-Mixed Concrete Association,
Shepperton, Middlesex, United Kingdom

Quality Control for Roller Compacted Concrete
Ernest Schrader, Civil Engineer, U.S. Army Corps of Engineers,
Walla, Walla, Washington

Please Note: Part II will be presented on Wednesday, March 7, 2:00 pm - 5:00 pm in Regency C room.
SEMINAR

TUESDAY, March 6, 1984
2:00 pm-5:00 pm
Room: Phoenix A & B

SEMINAR: PROGRESS IN CONCRETE
(PART II)
Sponsored by ACI Arizona Chapter

Seminar Chairman: W. Richard Studeny
Regional Manager
Master Builders
Phoenix, Arizona

CONCRETE CONSTRUCTION — TECHNOLOGY
Roller Compacted Concrete in the USA — 1984
Kenneth D. Hansen, Engineer, Western Energy and Water Resources, Portland Cement Association, Denver, Colorado

Concrete Construction on the Central Arizona Project
Jack W. Norberg, Supervisory Civil Engineer, Bureau of Reclamation, Phoenix, Arizona

Arizona Experience — Performance of Alternate Types of Concrete Highway Pavement
Gene R. Morris, Principal, Western Technologies, Inc., Phoenix, Arizona; Frank R. McCullagh, Director, Arizona Transportation Research Center, Tempe, Arizona; James P. Delton, Senior Materials Engineer, Arizona Department of Transportation, Phoenix, Arizona; A. Brady Smithson, Research Engineer, Arizona Transportation Research Center, Tempe, Arizona

Concrete Quality Requirements of the ACI Building Code
Jesse R. Wyatt, Consulting Engineer, Phoenix, Arizona
AWARDS BREAKFAST

WEDNESDAY, March 7, 1984
8:00 am-10:00 am
Room: Regency C & D

Come meet the awardees. Have fun, enjoy a good breakfast, and watch the multi-media awards presentation.

AWARDS

Honorary Membership
Alexander Major
John F. McLaughlin

Henry C. Turner Medal
Robert E. Philleo

Arthur R. Anderson Award
Robert E. Tobin

Joe W. Kelly Award
Noel J. Everard

Charles S. Whitney Medal
U.S. Naval Civil Engineering Laboratory

Henry L. Kennedy Award
Gerald B. Neville

Roger H. Corbetta Concrete Constructor Award
Cecil V. Wellborn

Alfred E. Lindau Award
Robert E. Englekirk

Cedric Willson Award
Thomas A. Holm

Construction Practice Award
Richard C. Meininger

Raymond C. Reese Structural Research Award
Robert Park
M. J. N. Priestley
Brian D. Scott

Wason Medal for the Most Meritorious Paper
Ernest K. Schrader

Wason Medal for Materials Research
Yasuhiro Yamamoto
Masaki Kobayashi

Chapter Activities Award
C. Taylor Test

Delmar L. Bloem Award for Distinguished Service
Theodore R. Crom
Charles G. Salmon
Harry Stavrides
Stewart C. Watson
GENERAL SESSION

WEDNESDAY, March 7, 1984
10:00 am-12:00 pm

Room: Regency A & B

GENERAL SESSION

Session Chairman: Howard B. Pugh, Sr.
General Chairman
1984 Annual Convention
Union Rock & Materials
Corporation
Phoenix, Arizona

Welcome to Arizona
Howard B. Pugh, Sr., General Chairman, 1984 Annual Convention,
ACI Arizona Chapter

Presidential Address
Norman L. Scott, ACI President, President, Consulting Engineers
Group, Glenview, Illinois

Certificates of Appreciation for the 1984 Annual Convention
Recognition of Retiring Officers
Recognition of Past Presidents
Tellers Report
Introduction of New Officers
Presentation of Memento to Retiring President

Keynote Speech:
"Structural Strength and Safety — The Profession at a Crossroad".
Walter P. Moore, Jr., Ph.D., P.E., President, Walter P. Moore and
Associates, Inc., Consulting Engineers and Planners, Houston, Texas
RESEARCH AND DEVELOPMENT
Sponsored by ACI Committee 123

Session Chairman:  James Dikeou
Director of Business
Quazite Corporation
Houston, Texas

The Effects of Aqueous Carbonation on the Strength Development of Concrete
W.H. Skelton, Associate Professor, University of South Florida, Tampa, Florida

Shaking Table Study of Flat-Plate Frame
Jack P. Moehle, Assistant Professor, University of California, Berkeley, California; John Diebold, Research Assistant, University of California, Berkeley, California; Howard Zee, Research Assistant, University of California, Berkeley, California

Combined Punching Shear and Torsional Shear in Reinforced Concrete Slabs
Richard N. White, Director, C & E School, Ithaca, New York

Tie Requirements for Prestressed Concrete Columns
Grant T. Halvorsen, Assistant Professor of Civil Engineering, University of West Virginia, Morgantown, West Virginia; Craig Carinci, Research Fellow, University of West Virginia, Morgantown, West Virginia

Shear Requirements for Prestressed Concrete T-Beams Reinforced with Welded Wire Fabric
Ian Robertson, Rice University, Houston, Texas

Freezing and Thawing Resistance of Non Air-Entrained and Air-Entrained Concrete Incorporating Silica Fume
V.M. Malhotra, Head of Construction Materials Section, Energy, Mines and Resources Canada, Ottawa, Ontario, Canada

Application of Expansive Concrete in Drilled Shafts
Shamim A. Sheik, Assistant Professor, University of Houston, Houston, Texas; Michael W. O'Neill, Associate Professor, University of Houston, Houston, Texas; M.A. Mehrazarin, Former Graduate Student, University of Houston, Houston, Texas

(continues — next page)
FIELD STUDIES OF CONCRETE FORM Pressures  
Mehdi Saidi, Associate Professor, University of Nevada, Reno, Nevada; Bruce M. Douglas, Professor of Civil Engineering, University of Nevada, Reno, Nevada; Robert Hayes, Graduate Research Assistant, University of Nevada, Reno, Nevada; Grove Holcomb, President, Holcomb Construction Company, Reno, Nevada

BIAXIAL TENSION TESTS OF THICK CONCRETE SECTIONS REINFORCED WITH LARGE DIAMETER BARS  

STUDY OF SUPERPLASTICIZERS IN CONCRETE  
Sukhvarsh Jerath, Assistant Professor, Washington State University, Pullman, Washington

A. J. Boase Award of the Reinforced Concrete Research Council  
The 1984 Boase Award will be presented to Paul F. Rice, during the Research and Development Session on Wednesday afternoon, March 7. (Traditionally the Award is presented immediately prior to the mid point break.)
TECHNICAL SESSION

WEDNESDAY, March 7, 1984
2:00 pm-5:00 pm

Room: Regency B

ALTERNATE METHODS OF SLAB DESIGN
Sponsored by ACI-ASCE Committee 421

Session Chairman: M. Daniel Vanderbilt
Professor of Civil Engineering
Colorado State University
Fort Collins, Colorado

Limit Analysis and Reinforced Concrete Slab Design
Peter Marti, Associate Professor, Department of Civil Engineering,
University of Toronto, Toronto, Ontario, Canada

Design Procedure for Reinforced Concrete Slabs and Use of Finite
Element Method
Brij B. Goyal, Project Manager, Harza Engineering Company,
Chicago, Illinois; Ved K. Vig, Section Head, Harza Engineering Com-
pany, Chicago, Illinois

Segmental Design Procedures
S.H. Simmonds, Professor, Department of Civil Engineering, University of Alberta, Edmonton, Alberta, Canada

Lateral Load Serviceability Analysis for Flat Plate Structures
Peter LePor Darvall, Senior Lecturer, Monash University, Clayton,
Victoria, Australia; Fred Allen, Senior Lecturer, Swinburne Institute of
Technology, Hawthorn, Victoria, Australia

Beam-Analogy Model for Flat Plate Lateral Loading
Neil M. Hawkins, Chairman, Civil Engineering, University of
Washington, Seattle, Washington; Haruki Akiyama, Project Manager,
Honshu-Shikoku Bridge Authority, Tokyo, Japan

Inelastic Analysis of the Flexural Strength of Flat Plate Floor Sys-
tems Subjected to Simultaneous Distributed and Concentrated
Loads
Jerzy T. Jacak, University of Kentucky, Lexington, Kentucky; Hans
Gesund, Professor of Structural Engineering, University of Kentucky,
Lexington, Kentucky
TECHNICAL SESSION

WEDNESDAY, March 7, 1984
2:00 pm-5:00 pm

Room: Regency D

STRUCTURAL DISTRESS — A STUDY IN CRACK DIAGNOSIS (PART II)
Sponsored by ACI Committees 222, 224, 408 and 445

Session Chairman: Tony C. Liu
Office of the Chief of Engineers
U.S. Army Corps of Engineers
Washington, D.C.

Session Co-Chairman: David G. Manning
Head of Materials Research
Ontario Ministry of Transportation & Communication
Downsview, Ontario, Canada

Understanding the Cause of Cracking in Concrete: A Diagnostic Aid
Manal El Rahman, Graduate Student, University of Calgary, Calgary, Alberta, Canada; Nigel G. Shrive, Professor, University of Calgary, Calgary, Alberta, Canada

Evaluation of Structural Cracking at Lockport Lock, Illinois Waterway
Richard L. Stowe, Chief of Materials and Concrete Analysis Group, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi; Roy L. Campbell, Civil Engineer Evaluation and Monitoring Group, Structures Laboratory, U.S. Army Engineers, Waterways Experiment Station, Vicksburg, Mississippi; Henry T. Thornton, Chief of Evaluation and Monitoring Group, Structures Laboratory, U.S. Army Engineers, Waterways Experiment Station, Vicksburg, Mississippi

Incidence Assessment of Transverse Cracking in Bridge Decks
David W. Johnston, Associate Professor of Civil Engineering, North Carolina State University, Raleigh, North Carolina; William L. Bingham, Associate Professor of Civil Engineering, North Carolina State University, Raleigh, North Carolina

Causes and Effects of Cracking on Precast Deck Bridge Systems
Fernando E. Fagundo, Assistant Professor of Civil Engineering, University of Florida, Gainesville, Florida; Clifford O. Hays, Jr., Professor of Civil Engineering, University of Florida, Gainesville, Florida; Joseph M. Richardson, Graduate Research Assistant, University of Florida, Gainesville, Florida

Investigation of Corrosion of Prestressing Tendons
Carolyn S. Ewart, Civil Engineer, Wiss, Janney, Elstner Associates, Inc., Emeryville, California; Sven E. Thomasen, Consultant, Wiss, Janney, Elstner Associates, Inc., Emeryville, California
ABDUN-NUR/CORDON SYMPOSIUM
ON QUALITY CONCRETE IN
CONSTRUCTION (PART II)
Sponsored by ACI Commitee 214

Symposium Chairman: Kenneth R. Lauer
University of Notre Dame
Department of Civil Engineering
Notre Dame, Indiana

Quality Assurance in Concrete at Guri Dam
William O'Donnell, Concrete Consultant, Harza Engineering, Chicago, Illinois; Luis E. Diaz, Chief of Structures Laboratories and Plants, EDELCA/Harza Engineering, Caracas, Venezuela

Concrete Evaluation — Callaway Nuclear Power Plant
Michael K. Armstrong, Senior Civil Engineer, Daniel International, Greenville, South Carolina

Sampling for Attributes — A Case History
Donald E. Dixon, Consultant, Soil & Material Engineers, Atlanta, Georgia

Selection of Required Average Strength f'cr for Compliance with Specified Strength f'c
P. Balaguru, Associate Professor, Rutgers University, Piscataway, New Jersey; V. Ramakrishnan, Professor of Civil Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota

Closing Remarks:
V. Ramakrishnan, Professor of Civil Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota
TECHNICAL SESSION

THURSDAY, March 8, 1984
9:00 am-12:00 pm
Room: Regency C

EVALUATION OF EXISTING CONCRETE BUILDINGS: STRENGTH (PART I)
Sponsored by ACI Committees 348 and 437

Session Chairman: Thomas L. Rewerts
Ciorgba Group, Inc.
Schaumburg, Illinois

Importance of Field Condition Survey in Strength Evaluation of Existing Concrete Buildings
Suresh G. Pinjarkar, Senior Structural Consultant, Construction Technology Laboratories, Skokie, Illinois

Recognizing and Evaluating Concrete Defects: Two Case Histories
Brian J. Pashina, Manager, Construction Materials Department, Twin City Testing and Engineering Laboratory, Inc., St. Paul, Minnesota;
Keith A. Pashina, Civil Engineer, Twin City Testing and Engineering Laboratory, Inc., St. Paul, Minnesota

Nondestructive Testing — Use it Wisely
Merle E. Brander, President, Brander Construction Technology, Inc.,
Green Bay, Wisconsin

Evaluation by Analytical Methods
Predrag L. Popovic, Consultant, Wiss, Janney, Elstner Associates, Inc., Northbrook, Illinois; John M. Hanson, President, Wiss, Janney,

Evaluation of Corrosion Deterioration of Reinforcement in Concrete Structures in the Middle East
Rasheeduzzafar, Professor, University of Petroleum and Minerals, Dhahran, Saudi Arabia; Fahd H. Dakhil, Vice Rector for Research and Graduate Studies, University of Petroleum and Minerals, Dhahran, Saudi Arabia; Ahmad Saad Al-Gahtani, Lecturer, University of Petroleum and Minerals, Dhahran, Saudi Arabia

Evaluation of Strength of Existing Flat Slabs Using Stress Relief Method
Dov Kaminetzky, President, Feld, Kaminetzky & Cohen, New York,
New York

Inspection and Evaluation of Concrete Floors Subjected to Chemical Deterioration
Avanti C. Shroff, Senior Vice President, Iliffand Kavanagh Waterbury,
New York, New York

Please Note: Part II will be presented Thursday, March 8, 2:00 pm - 5:00 pm in Regency C room.

Part III will be presented Friday, March 9, 9:00 am - 12:00 pm in Regency C room.
THURSDAY, March 8, 1984
9:00 am-12:00 pm

DEVELOPMENTS IN DESIGN FOR SHEAR AND TORSION (PART I)
Sponsored by ACI-ASCE Committee 445

Session Chairman: Paul Zia
Professor and Head
Department of Civil Engineering
North Carolina State University
Raleigh, North Carolina

Reinforced and Prestressed Concrete Haunched Beams Under Shear
E. I. El-Niema, Associate Professor, King Saud University, Riyadh, Saudi Arabia

Design for Sustained Torsional Loading
C. Douglas Goode, Senior Lecturer, University of Manchester, Manchester, England.

Torsion Design of Edge Beams in Building Floors
B. V. Rangan, Associate Professor, University of New South Wales, Kensington, Australia; A. S. Hall, Emeritus Professor, University of New South Wales, Kensington, Australia

Assessing the Shear and Moment Strength of Reinforced Concrete Flat Slab Structures at the Edge Column Location
S. G. Gilbert, Structures Lecturer, Civil Engineering Department, The Queen's University of Belfast, Belfast, Great Britain; A. E. Long, Professor and Head of Civil Engineering Department, The Queen's University of Belfast, Belfast, Great Britain

Design for Shear of Seismic Resistant Reinforced Concrete Walls
Vitelmo V. Bertero, Professor, Department of Civil Engineering, University of California, Berkeley, California; Ahmet E. Akatan, Associate Research Engineer, University of California, Berkeley, California

Mechanical Behavior of Reinforced Concrete Members Subjected to Combined Bending, Shear and Torsion
Takahisa Okamoto, Department of Civil Engineering, Tokyo Institute of Technology, Tokyo, Japan; Shigeyoshi Nagataki, Department of Civil Engineering, Tokyo Institute of Technology, Tokyo, Japan

Please Note: Part II will be presented Thursday, March 8, 2:00 pm - 5:00 pm in Regency D room.
TECHNICAL SESSION

THURSDAY, March 8, 1984
9:00 am-12:00 pm          Room: Regency B

ANCHORAGE TO CONCRETE (PART I)
Sponsored by ACI Committees 349 and 355

Session Chairman:       Harry B. Lancelot
                        Director of Engineering
                        Richmond Screw Anchor
                        Company, Inc.
                        Fort Worth, Texas

Qualification Tests on Concrete Anchors for CANDU Nuclear Power Plants
George A. Senkiw, Engineer, Ontario Hydro, Toronto, Ontario, Canada

Metallic Expansion Anchors in Nuclear Power Plants
Rolf Eligehausen, Senior Research Engineer, University of Stuttgart, West Germany

The Effect of Preload Upon the Strength of Typical Concrete Expansion Anchors Under Dynamic Loading
M. R. Lindquist, Principal Engineer, Engineering Department, Westinghouse Hanford Company, Richland, Washington

Performance Characteristics of Undercut Anchors
Harry Wiewel, President, Techmar, Inc., Long Beach, California

An Evaluation of Expansion Anchors in Hardened Grout and Mortar
Moorman L. Scott, Manager - Product Engineering and Development, Master Builders, Beachwood, Ohio; Paul Hollenbach, Senior Technical Associate, Ramset, Chester, New Jersey

Methods of Anchor Bolt Slewing
Arthur W. Newbould, Consultant, Sinco, Inc., Stamford, Connecticut

Please Note: Part II will be presented on Friday, March 9, 9:00 am - 12:00 pm in Regency B room.
SEMINAR: DESIGN OF INDUSTRIAL FLOORS
Sponsored by ACI Committee E702

Session Chairman: Kenneth Murray
Gilbert/Commonwealth
Reading, Pennsylvania

Session Moderator: Robert Johnson
Eastman Kodak Company
Rochester, New York

Planning, Design and Construction of Slabs on Grade: An Overview
Boyd C. Ringo, Professor of Civil Engineering, University of Cincinnati, Cincinnati, Ohio

Design Alternatives for Slabs on Grade
A. Fattah Shaikh, Professor, University of Wisconsin, Milwaukee, Wisconsin

Specifications, Materials and Procedures in Accordance with ACI 302, Guide for Concrete Floor and Slab Construction: A Case Study
William S. Phelan, Vice President, Euclid Chemical Company, East Brunswick, New Jersey

"Design of Industrial Floors" $18.00

This material may be purchased at the registration desk.
EVALUATION OF EXISTING CONCRETE BUILDINGS: STRENGTH (PART II)
Sponsored by ACI Committees 348 and 437

Session Chairman: Grant T. Halvorsen
Professor
West Virginia University
Civil Engineering Department
Morgantown, West Virginia

Performance Testing of Concrete Structures in Service
R. D. Browne, Manager, Research and Development Department,
Taywood Engineering, Ltd., Southall, Middlesex, England; J. R. Warren,
Research Engineer, Research and Development Department,
Taywood Engineering, Ltd., Southall, Middlesex, England; A. R. Abbott,
Research Engineer, Research and Development Department,
Taywood Engineering, Ltd., Southall, Middlesex, England

Uncertainties of In-Situ Assessment of Concrete Strength
Presented by: Grant T. Halvorsen, Professor, West Virginia University,
Civil Engineering Department, Morgantown, West Virginia;
Author: Theodossios P. Tassios, Professor, National Technical University of Athens, Athens, Greece

Strength Evaluation Process
E. A. B. Salse, Director, Structural Evaluation and Fire Research
Department, Construction Technology Laboratories, Skokie, Illinois;
Suresh G. Pinjarkar, Senior Structural Consultant, Construction Technology Laboratories, Skokie, Illinois

Parking Structure Rehabilitation — The Role of Load Tests
John A. Bickley, Vice President, Trow Ltd., Consulting Engineers,
Rexdale, Ontario, Canada

Structural Evaluation of a Post-Tensioned Parking Garage
William J. Stea, Associate Consulting Civil Engineer, EBASCO Services,
Incorporated, New York, New York; John J. Healey, Consulting
Civil Engineer, EBASCO Services Incorporated, New York, New York;
Ignacio Romero, Consulting Civil Engineer, EBASCO Services Incorporated, New York, New York

Evaluation and Testing of a Fire Damaged Parking Structure

Please Note: Part III will be presented Friday, March 9, 1984, 9:00 am
- 5:00 pm in Regency C room.
THURSDAY, March 8, 1984  
2:00 pm-5:00 pm  
Room: Regency B

CLINIC ON CURING OF CONCRETE  
Sponsored by Committee 308

Session Chairman  
and Moderator: Luke M. Snell  
Professor/Consultant  
Southern Illinois University  
Edwardsville, Illinois

Determining the Efficiency of Curing  
Ephraim Senbettam, Special Projects Engineer, Master Builders,  
Cleveland, Ohio

Specify the Curing Required  
Robert J. Van Epps, Consultant, Stone and Webster, Boston, Massachusetts

Need for Curing by an Owner  
Joseph Lamond, Chief, Concrete Section, U. S. Army Corps of  
Engineers, Washington, D.C.

Effect of Moisture Availability and Curing of Concrete Containing Fly  
Ash  
Steve Gebler, Senior Engineer, Portland Cement Association, Skokie,  
Illinois; Paul Miejer, Consultant, Portland Cement Association,  
Skokie, Illinois

Construction Curing Techniques  
Robert Ytterberg, Contractor, Kalman Floor Company, Evergreen,  
Colorado

Owners, designers, contractors, manufacturers and consultants will present curing of concrete from their individual perspectives. The presentations will illustrate successful and unsuccessful techniques of curing. The panelists will troubleshoot and analyze curing problems with the audience.
TECHNICAL SESSION

THURSDAY, March 8, 1984
2:00 pm-5:00 pm
Room: Regency D

DEVELOPMENTS IN DESIGN FOR SHEAR AND TORSION (PART II)
Sponsored by ACI-ASCE Committee 445

Session Chairman: Peter Gergely
Professor and Department Chairman
Structural Engineering
Cornell University
Ithaca, New York

Progress in Shear and Torsion
Peter Mueller, Associate Professor, Department of Civil Engineering,
Lehigh University, Bethlehem, Pennsylvania

Combined Shear and Torsion — The Blind Spot
Douglas H. Clyde, Professor, University of Western Australia, Nedlands, Western Australia

Design of Reinforced Concrete Deep Beams
David M. Rogowsky, Structural Engineer, Underwood McLellan, Ltd.,
Winnipeg, Manitoba, Canada; James G. MacGregor, Professor of Civil Engineering, University of Alberta, Edmonton, Alberta, Canada

Shear and Torsion Design by the New Canadian Code
Michael P. Collins, Professor, University of Toronto, Toronto, Ontario, Canada; Denis Mitchell, Associate Professor, McGill University, Montreal, Quebec, Canada

Unified Design Procedure for Shear and/or Torsion in Reinforced Partially Prestressed and Fully Prestressed Concrete Members
Julio A. Ramirez, Assistant Professor, Purdue University, Lafayette, Indiana

The Use of Truss Models in Detailing
Peter Martí, Associate Professor of Civil Engineering, University of Toronto, Toronto, Ontario, Canada

General Discussion of Design Approaches
THURSDAY, March 8, 1984
2:00 pm-5:00 pm
Room: Regency A

OPEN PAPER SESSION
Sponsored by TAC AdHoc Committee

Session Chairman: David W. Fowler
Professor
University of Texas
Austin, Texas

State of the Art of Forming High Rise Buildings
Roger S. Johnston, Manager, Denver Field Engineering Office, Patent Scaffolding Company, Denver, Colorado

Pumice and Scoria Evaluated as Structural Concrete Aggregates
David J. Akers, Director of Quality Assurance, Southern California Soil and Testing, Inc., San Diego, California; Robert W. Floyd, Manager — Testing Laboratory, Conrock Company, San Diego, California

Earthquake Analysis of Segmentally Constructed Hyperbolic Cooling Towers
Dennis J. Fallon, Assistant Professor of Civil Engineering, Old Dominion University, Norfolk, Virginia

Volumetric Proportioning and Continuous Mixing — An Overview
Thomas R. Clapp, Chapin & Chapin, Inc., Norwalk, Ohio

The Design and Construction of Roller Compacted Concrete Dams
Charles V. Logie, Consulting Partner, Dames & Moore, Phoenix, Arizona; Ryan R. Berg, Staff Engineer, Dames & Moore, Phoenix, Arizona

Experimental Modal Analysis
B. J. Morgan, Senior Structural Engineer, Construction Technology Laboratories, Skokie, Illinois

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TECHNICAL SESSION

THURSDAY, March 8, 1984
7:30 pm-10:00 pm
Room: Regency C

FORUM: WHY USE SILICA FUME OR GROUND SLAG IN CONCRETE?
Sponsored by ACI Committees 123 and 226

Forum Chairman: Robert L. Henry
Wiss, Janney, Elstner
Associates, Inc.
Arlington, Texas

Forum Moderator: Fred A. Anderson
Department of the Army
Office of the Chief of Engineers
Washington, D.C.

Panelists: Bryant Mather
Chief, Structures Laboratory
U.S. Army Engineers Waterways
Experiment Station
Vicksburg, Mississippi
Donald W. Lewis
Chief Engineer
National Slag Association
Alexandria, Virginia
Mohan Malhotra
CANDM/EMR
Ottawa, Ontario
Canada

The use of silica fume and ground iron blast furnace slag as cementing agents in concrete is new to this county relative to the old country. What do you think of its use? Will it ever be useful? Will there ever be enough of the material to be practical for general construction? You will receive a user’s perception of the place of silica fume and slag in the concrete industry. You will learn something about the materials and their usefulness. You will hear and see of some recent uses of the products on Corps projects and be posed with some questions on application.
FRIDAY, March 9, 1984
9:00 am-12:00 pm
Room: Regency C

TECHNICAL SESSION

EVALUATION OF EXISTING CONCRETE BUILDINGS: SAFETY (PART III)
Sponsored by ACI Committees 348 and 437

Session Chairman: Bryan Erler
Structural Design Director
Sargent & Lundy Engineers
Chicago, Illinois

Condition Evaluation and Interpretation for Existing Concrete Buildings
James T. P. Yao, Professor of Civil Engineering, Purdue University, West Lafayette, Indiana; Boris Bresler, Principal, Wiss, Janney, Elstner, Associates Inc., Emeryville, California; John M. Hanson, President, Wiss, Janney, Elstner Associates Inc., Northbrook, Illinois

Reliability of Existing Concrete Structures
Andrew Scanlon, Professor of Civil Engineering, Department of Civil Engineering, University of Alberta, Edmonton, Alberta, Canada

Determination of Lateral Load Carrying Characteristics of Concrete Buildings
Peter R. Sparks, Associate Professor, Department of Civil Engineering, Clemson University, Clemson, South Carolina

Assessment of Expected Vulnerability of Reinforced Concrete Buildings Due to Seismic Excitation
Miodrag Velkov, Professor, Institute of Earthquake Engineering and Engineering Seismology, Skopje, Yugoslavia; Zivota Perisic, Professor of Civil Engineering, University of Belgrade, Beograd, Yugoslavia; Predrag Gavrilovic, Professor of Civil Engineering, Institute of Earthquake Engineering and Engineering Seismology, Skopje, Yugoslavia; Milorad Ivkovic, Professor of Civil Engineering, University of Belgrade, Beograd, Yugoslavia

Seismic Capacity of Existing Reinforced Concrete Buildings
Tsuneko Okada, Professor, Institute of Industrial Science, University of Tokyo, Tokyo, Japan; Matsutaro Seki, Research Associate, Institute of Industrial Science, University of Tokyo, Tokyo, Japan

Methodologies of Making Accurate Statements about Location Reinforcement in Concrete
Luke M. Snell, Associate Professor of Construction, Southern Illinois University, Edwardsville, Illinois; Norval Wallace, Professor of Engineering, Southern Illinois University, Edwardsville, Illinois; Robert Rutledge, Professor of Engineering, Southern Illinois University, Edwardsville, Illinois
TECHNICAL SESSION

FRIDAY, March 9, 1984
9:00 am-12:00 pm
Room: Regency B

ANCHORAGE TO CONCRETE (PART II)
Sponsored by ACI Committees 349 and 355

Session Chairman: F. L. Moreadith
Manager of Power Engineering
Power & Industrial Systems Division
Gilbert Associates, Inc.
Reading, Pennsylvania

Research Needs in Design of Anchorage to Concrete
Richard E. Klingner, Associate Professor of Civil Engineering, University of Texas, Austin, Texas; Edwin G. Burdette, Professor of Civil Engineering, University of Tennessee, Knoxville, Tennessee

Shear Friction Transfer Mechanisms for Supports Attached to Concrete
Raymond R. Funk, Senior Civil Engineer, Tennessee Valley Authority, Knoxville, Tennessee

Interactive Anchorage Design Using ACI 349
John G. Shipp, Supervising Structural Engineer, Fluor Engineers Inc., Irvine, California; Robert King, Principal Structural Engineer, Fluor Engineers Inc., Irvine, California; Edward Haninger, Senior Structural Engineer, Fluor Engineers Inc., Irvine, California; Matthew Stennes, Associate Structural Engineer, Fluor Engineers Inc., Irvine, California

The Evolution, Philosophy, Criteria and Use of Appendix B, Steel Embedments, ACI 349
Dwaine A. Godfrey, President, Nuclear Structures, Inc., Atlanta, Georgia

Question and Answer Session on Appendix B — Steel Embedments, ACI 349
FRIDAY, March 9, 1984
9:00 am-12:00 pm

SYMPOSIUM: DEFLECTIONS OF STRUCTURES
Sponsored by ACI Committee 435

Symposium Chairman: Gajanan M. Sabnis
Professor of Civil Engineering
Howard University
Washington, D.C.

Symposium Co-Chairman: Donald R. Buettner
President
Computerized Structural Design, Inc.
Milwaukee, Wisconsin

Introduction and Background
Donald R. Buettner, President, Computerized Structural Design, Inc.
Milwaukee, Wisconsin

Temperature — Induced Deflections of Reinforced Concrete Members
Andrew Scanlon, Professor of Civil Engineering, University of Alberta,
Edmonton, Alberta, Canada

Field Measurements of Deflections
S. K. Ghosh, Associate Professor of Civil Engineering, University of Illinois, Chicago, Illinois; Donald R. Buettner, Computerized Structural Design, Inc., Milwaukee, Wisconsin; Robert G. Drysdale, Assistant Professor, McMaster University, Hamilton, Ontario, Canada; M. Saeed Mirza, McGill University, Montreal, Quebec, Canada; Edward G. Navy, Rutgers University, Piscataway, New Jersey; Andrew Scanlon, University of Alberta, Edmonton, Alberta, Canada; Gajanan Sabnis, Howard University, Washington, D.C.

Explanation of the Draft Australian Code Provisions for Deflections and Cracking
Paul F. Walsh, Safety and Risk Program, CSIRO, Hightt, Victoria, Australia

Deflection of Waffle Slabs Under Gravity and In-Plane Loads
Ti Huang, Professor of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania; Xue-Ren Ji, Instructor, Harbin Institute of Civil Engineering, Harbin, People's Republic of China; S. J. Chen, Research Assistant, Lehigh University, Bethlehem, Pennsylvania; L. W. Lu, Professor of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania

Measured and Predicted Long-Term Deformations in a Tall Concrete Building
Stephen L. Bakoss, Senior Lecturer, New South Wales Institute of Technology, Broadway, New South Wales, Australia; A.J. Burfitt, Senior Lecturer, New South Wales Institute of Technology, Broadway, New South Wales, Australia; L. Cridland, Senior Lecturer, New South Wales Institute of Technology, Broadway, New South Wales, Australia

(continues — next page)
TECHNICAL SESSION

SYMPOSIUM: DEFLECTIONS OF STRUCTURES (Continued)

Wales Institute of Technology, Broadway, New South Wales, Australia; J. L. Heiman, Principal Research Engineer, Department of Housing and Construction, Chatswood, New South Wales, Australia

Deformations and Stresses in Flanged Concrete Structures Due to Temperature Differential
Fahim A. Batia, Associate Professor, Department of Civil Engineering, North Dakota State University, Fargo, North Dakota; Patrick R. Reinsnor, Graduate Student, Department of Civil Engineering, North Dakota State University, Fargo, North Dakota; Divakar V. Pathak, Senior Structural Engineer, Bechtel Associates Power Corporation, Ann Arbor, Michigan

Deflection of Partially Prestressed Beams Under a Combination of Long-Time and Short-Time Loading.

Structural Serviceability Under Dynamic Loading
Anis Farah, Associate Professor, Laurentian University, Sudbury, Ontario, Canada
FRIDAY, March 9, 1984
9:00 am-12:00 pm
Room: Regency D

NONDESTRUCTIVE TEST METHODS FOR CONCRETE STRENGTH
Sponsored by ACI Committees 214 and 228

Session Chairman: H. S. Lew
National Bureau of Standards
Washington, D.C.

Nondestructive Test Methods for Concrete Strength — A Review
Nicholas J. Carino, Research Civil Engineer, National Bureau of Standards, Washington, D.C.

In-Situ Tests: Variability and Strength Prediction of Concrete at Early Ages
G.G. Carett, Materials Engineer, CANMET, Ottawa, Ontario, Canada; V.M. Malhotra, Head of Construction Materials Section, CANMET, Ottawa, Ontario, Canada

Nondestructive Testing — An Evaluation Tool
Robert S. Jenkins, Senior Materials Engineer, Law Engineering Testing Company, Atlanta, Georgia

Early Age Concrete Strength Determination by Maturity
Tarun Naik, Associate Professor, Department of Civil Engineering, University of Wisconsin, Milwaukee, Wisconsin; Thomas J. Parsons, Civil Engineer, National Institute of Occupational Safety and Health, Division of Safety Research, Morgantown, West Virginia

Concrete Pullout Test Methods: Historical Background and Scientific Level Today
Herbert Krenchel, Assistant Professor, Department of Structural Engineering, Technical University of Denmark, Denmark; John A. Bickley, Vice President, Trow, Ltd., Rexdale, Ontario, Canada

Geometric and Aggregate Effects on Reliability of Pullout Tests

Statistical Evaluation of In-Place Compressive Strength of Concrete
ACI
1984 FALL
CONVENTION

1984 Fall Convention
October 28-December 2
Grand Hyatt Hotel
New York, New York

Note: The convention preview will
be distributed to ACI Members in
August 1984. Others may receive a
copy by contacting Institute
Headquarters.

ACI ACCESSORIES

At the ACI convention registration desk
you may place an order or purchase
the following accessories:

ACI Fellow Pin/Tie Tac $9.00
Our ACI emblem and Fellow designation
in 10k gold

ACI Member Pin $8.75
Rhodium, enameled in ACI blue

Necktie $6.00
Dark blue, embroidered with ACI logo

Golf Hat $5.95
Dark blue with ACI logo

Money Clip $4.50
Antique silver tone, in gift box

ACI Key Tags $3.95
Two styles — available in all-chain
or ring mesh, both have
pewter finish

aci
SUNDAY, March 4, 1984
6:30 pm- 8:00 pm Wine & Cheese Party — Hyatt Regency Hotel
Sponsored by ACI Arizona Chapter

MONDAY, March 5, 1984
8:30 am- 3:00 pm Hospitality: Borein Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)
10:00 am-11:30 am Orientation Program
Your hostess will be presenting a slide show that will give you an overview of the Valley of the Sun. She will share shopping hints, entertainment ideas and cultural places to visit.
3:00 pm- 5:00 pm Spouse Wine & Cheese Open House:
Hosted by ACI President & Mrs. Norman L. Scott

TUESDAY, March 6, 1984
8:30 am- 3:00 pm Hospitality: Borein Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)
10:00 am- 2:00 pm Valley View & Luncheon (cost $18.00)
Enjoy a guided tour of Phoenix and the Valley of the Sun, with all of its famous attractions, and special places! You'll dine at a restaurant hi-atop a mountain in the southern edge of the valley with a spectacular view.
3:00 pm- 4:30 pm Mexican Taste Treats (cost $9.00) — Regency A
You'll taste mouth watering Mexican recipes, prepared for you by a universal chef. Share your culinary conquests with your friends — a packet of proven recipes will be yours to take home.

WEDNESDAY, March 7, 1984
8:30 am- 3:00 pm Hospitality: Borein Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)
10:00 am-12:00 pm General Session (all are invited)
8:00 am- 5:00 pm Sedona/Montezuma Castle & Luncheon (cost $35.00)
Visit Montezuma's Castle National Monument, a prehistoric cliff dwelling. Then, venture on to Sedona and Oak Creek Canyon, one of the most scenic areas in Arizona. There you will visit Tlaquepaque a renowned arts and crafts center with its resident artists. During your day, enjoy a leisurely luncheon.
6:30 pm- 8:00 pm Concrete Mixer (all are invited)

(continues — next page)
THURSDAY, March 8, 1984

8:30 am- 3:00 pm  Hospitality: Borein Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)

10:00 am- 3:00 pm  Heard Museum/Shopping Spree
(cost $15.00)
Arts and Crafts of America's natives are preserved in the Heard Museum. The museum has an extensive display of Southwestern silverwork, baskets, pottery, textiles and artifacts.
Visit two fascinating shopping areas, the Borgata and Fifth Avenue. Experience the enchantment of the Borgata, with its fifty boutiques. Then ... off to the Fifth Avenue area with over 350 shops to intrigue you!
(Lunch on your own)

6:00 pm-10:00 pm  Wild West Evening at Rawhide
(cost $30.00 per person)
All are invited to spend an evening at Rawhide, an old west area of Phoenix that offers down home entertainment, good western grub, and more!

FRIDAY, March 9, 1984

8:30 am-10:00 am  Hospitality: Borein Room — Coffee & rolls and time to say “Good-Bye” to our friends.

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WILD WEST EVENING AT RAWHIDE

Come with us on Thursday (6:00 pm - 10:00 pm) across the bridge that's almost a hundred years long! Spanning a natural arroyo, it leads from a 20th century parking area directly into a small western town of the 1880's. There will be down home entertainment, good western grub and more!

Cost is $30.00 per person. Please purchase tickets by Tuesday.
DIAMOND CONTRIBUTORS

ARIZONA PORTLAND CEMENT COMPANY
BLUE CIRCLE ARIZONA, INC.
MASTER BUILDERS
PHOENIX CEMENT COMPANY
WESTERN TECHNOLOGIES, INC.

GOLD CONTRIBUTORS

Kachina Ready-Mix Company
National Ash Association
The Tanner Companies
W. R. Grace & Company
Western Ash Company

SILVER CONTRIBUTORS

Allied Concrete & Materials Company
Ameron Pipe Division S. W.
Cement Transporters, Inc.
Conrock Company of Arizona
Franzoy, Corey & Associates
Gallup/Sand & Gravel Company
Johnson Stewart-Johnson Mining Company
Kaiser Cement Corporation
Kasler Corporation
Kitchell Contractors
M. M. Sundt Company
Phoenix Ready-Mix Company
Phoenix Sand & Gravel, Inc.
R.G.A. Consulting Engineers
Salt River Project
San Xavier Rock & Materials
Sergent, Hauskinds and Beckwith Engineers
Southwest Portland Cement Company
Stanley Structures
Superlite Builders Supply, Inc.
Union Rock & Materials
Additional Meeting Rooms:
Note: Guest rooms on the third, fifth and sixth floors are used as meeting rooms.
Room numbers: 316, 318, 319, 322, 323, 326, 327, 334, 335, 503, 603.