American Concrete Institute

1989 FALL CONVENTION

October 29 - November 3, 1989
San Diego, California

Convention Theme:
Marine and Water Resources Facilities
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AMERICAN CONCRETE INSTITUTE

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Lone Star Industries, Inc.
Greenwich, Connecticut

Master Builders, Inc.
Cleveland, Ohio

Medusa Cement Company
Cleveland, Ohio

Phoenix Corporation
Honolulu, Hawaii

Portland Cement Association
Skokie, Illinois

Post-Tensioning Institute
Phoenix, Arizona
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October 29 - November 3, 1989  
San Diego Marriott Hotel & Marina  
San Diego, California  

Convention Theme:  
*Marine and Water Resources Facilities*

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October 1989

Dear ACI Convention Delegates:

It's convention time again!

As president of the American Concrete Institute, it is my pleasure to welcome you to San Diego and to extend ACI's best wishes for an exciting, fun-filled, week-long learning experience.

San Diego is a combination of things—a old Spanish town, a modern thriving metropolis, and a laid-back, carefree, ocean resort. We hope you will take the time to explore the area and enjoy all the attractions and charm of this beautiful, sunny region of Southern California.

As usual, our program this week is crowded with meetings, technical sessions, forums, symposia, social events, spouse tours, and more. You'll find it difficult but hopefully not impossible to attend everything that you want to take in. Chances are that this will be a busy week for you but that's the hallmark of ACI conventions—busy.

Don't forget to take the time to attend the Concrete Mixer, the General Session, the "rap" breakfast, and the many other events that have become traditional at Institute meetings. When it's over on Friday, let us know what you think and pass along any ideas you might have to make ACI conventions even better and more appealing to our members.

Enjoy this time away from the office, relax and explore the area, greet old friends again, and benefit from the fact that the world's leading concrete experts are here.

Dora and I look forward to greeting each of you personally. If we or anyone on the ACI staff or local convention committee can be of help, feel free to ask. You're among friends—so take advantage of it!

Paul Zia
President
American Concrete Institute

progress through knowledge
GREETINGS
TO
THE AMERICAN CONCRETE INSTITUTE
ON THE OCCASION OF
YOUR FALL CONVENTION

May I extend my best personal regards and greetings to the members of the American Concrete Institute and your distinguished guests as you come together for your Fall Convention October 19-20, November 2-3, 1989, at the San Diego Marriott Hotel and Marina.

We take particular pride in the natural, God given blessings of a temperate climate and jewel-like setting on the Pacific Ocean. We are particularly proud of beautiful Balboa Park with its famous zoo, the revitalized Centre City, our incomparable harbor, beaches and bay, the glorious Cuyamaca mountains, and the exciting international border shared with our friends in Tijuana, Mexico. Also, during your stay we will be hosting the San Diego Arts Festival: Treasures of the Soviet Union with fabulous displays of Imperial Faberge Eggs and priceless Georgian Icons.

I hope you will have the opportunity during your stay to tour some of the many attractions which are available for your cultural enrichment, recreation and relaxation. It is a great honor for the City of San Diego to be selected for your visit.

Sincerely,

Maureen O'Connor
Mayor
October 5, 1989

TO THE PARTICIPANTS OF THE AMERICAN CONCRETE INSTITUTE CONVENTION:

It is my pleasure to welcome those attending the American Concrete Institute’s 1989 Fall Convention being held here in San Diego from October 29 to November 3, 1989. San Diego is proud of its reputation as one of the world’s most lovely and exciting cities.

The innovation of concrete has enabled our nation to develop its beautiful skylines and remarkable roadways. It is, quite literally, the foundation upon which communities build. Through the years your institute has accepted the challenge of developing imaginative applications for concrete. Your meeting, here in San Diego, will give rise to the exchange of ideas and information that will insure an increased knowledge of its uses. Hopefully, you will also have a chance to see our beautiful city.

Please accept my wishes for a very memorable and informative conference. We look forward to doing everything possible to make your time here a complete success.

With warm regards,

PETE WILSON
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W. R. Grace & Company
Master Builders, Inc.
Nelson and Sloan Concrete Company
Phoenix Cement Company
Pre-Mixed Concrete Company
Southern California Chapter ACI

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The American Concrete Institute and the ACI San Diego International Chapter deeply appreciate their support.
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Nelson & Sloan Concrete Company

The officers, staff and members of ACI would like to thank the Local Convention Committee, the Hostesses, and the ACI San Diego International Chapter for their contribution to a successful 1989 Fall Convention.

THANK YOU!
ACI SAN DIEGO
INTERNATIONAL CHAPTER
CONVENTION COMMITTEE

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Pre-Mixed Concrete Company

Vice Chairman and Staffing
Robert W. Floyd

Secretary
Richard E. Miller
Southern California Soil and Testing, Inc.

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Pre-Mixed Concrete Company

Golf Tournament
Al Maguire
Mon-Dale, Inc.

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Juan R. Diaz
Testing Services and Inspection

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James R. Libby and Associates

General Assistance
Charles M. Dabney
Charles Dabney Associates

Publicity
Roger Hocking
Pountney and Associates

Contractor Relations
John Nooney
Padre Transit Mix

Student Program
Nazmi Sharabi
San Diego State University
10% OFF ALL BOOKS RELATED TO THE SAN DIEGO CONVENTION THEME!

Marine & Water Resources Facilities

201.2R-77(82) Guide to Durable Concrete
210R-87 Erosion of Concrete in Hydraulic Structures
222R-85 Corrosion of Metals in Concrete
330.3R-72(85) Suggested Design and Construction Procedures for Pier Foundations
343R-88 Analysis and Design of Reinforced Concrete Bridge Structures
344R-76 Design and Construction of Circular Prestressed Concrete Structures with Circumferential Tendons
344R-W Design and Construction of Circular Wire and Strand Wrapped Prestressed Concrete Structures
345.1R-83 Routine Maintenance of Concrete Bridges
346-81/ Standard Specification for Cast-in-Place Nonreinforced Concrete Pipe and Recommendations
350R-83 Concrete Sanitary Engineering Structures
357R-84 Guide for the Design and Construction of Fixed Offshore Concrete Structures
357.1R-85 State-of-the-Art Report on Offshore Concrete Structures for the Arctic
357.2R-88 State-of-the-Art Report on Barge-Like Concrete Structures
515.1R-79(85) Guide to the Use of Waterproofing, Dampproofing, Protective, and Decorative Barrier Systems for Concrete
546.1R-80 Guide for Repair of Concrete Bridge Superstructures
546.1R-86 Guide for the Use of Polymers in Concrete
SP-49 Corrosion of Metals in Concrete
SP-65 Performance of Concrete in Marine Environment
SP-69 Applications of Polymer Concrete
SP-89 Polymer Concrete: Uses, Materials and Properties
SP-93 Concrete in Transportation
SP-99 Polymer Modified Concrete
SP-102 Corrosion, Concrete, and Chlorides
SP-108 Permeability of Concrete
SP-109 Concrete in Marine Environment
SP-116 Polymers in Concrete: Advances and Applications

10% off the member price of any of these publications if ordered before December 1, 1989
SPECIAL EVENTS

OPENING RECEPTION
Sunday, October 29, 1989  San Diego Ballroom B, C
5:30 - 7:00 PM
Welcome to San Diego! Meet the San Diego International Chapter members as they host tonight’s event—and compliment them on a job well done!

COFFEE BAR
Monday through Friday  Marriott Hall Foyer
8:00 - 10:00 AM

4:30 REHABILITATION (Cash Bar)
Tuesday, October 31, 1989  The Yacht Club
4:30 - 6:30 PM
After a long day full of meetings, join your colleagues before your evening plans begin. We are meeting at the Yacht Club on the first floor of the Bayside Pavilion. The bar has both indoor and outdoor beverage service.

CONCRETE MIXER
Wednesday, November 1, 1989  Marriott Hall 3, 4, 5, 6
6:30 - 8:00 PM
Let’s “mix” at the mixer sponsored by the San Diego International Chapter. Your ticket is complimentary with a full week’s registration fee.

PAUL KLIEGER
RECEPTION AND DINNER
Thursday, November 2, 1989
San Diego Ballroom A
6:30-7:00 PM  Reception (Cash Bar)
7:00-10:00 PM Dinner $30.00/person
(Cash Bar available)
Join ACI as we honor Paul Klieger, an Honorary Member of the Institute with almost 50 years of membership, whose dedication to ACI is respected by all. Please purchase tickets in advance at the ACI Registration Desk located in Marriott Hall.

CONTINENTAL BREAKFAST MEETINGS
(by invitation only)
Monday, October 30, 1989  7:00 - 8:30 AM
318 Steering Committee Breakfast  Executive Conference Rm.
Tuesday, October 31, 1989  7:00 - 8:30 AM
E903 Chairman Training Breakfast  Torrey 2.3
Wednesday, November 1, 1989  7:00 - 8:30 AM
EAC Seminar Planning Breakfast  Columbia 2
E702 Educators Roundtable Breakfast  Newport Beach
Thursday, November 2, 1989  7:00 - 8:30 AM
E903 Toronto Session Chairmen and Speakers Breakfast  Santa Rosa
SPECIAL EVENTS

SOCIAL ACTIVITIES PROGRAM
An excellent program has been planned by the ACI San Diego International Chapter. Please purchase tour tickets in advance at the ACI Registration Desk located in Marriott Hall. See pages 28-29 for further details.

REGISTRATION INFORMATION

The ACI staff is eager to answer any questions you may have pertaining to the convention. Our registration desk is open to serve you during the following hours:

Sunday ............ October 29 ........ 1:00 PM - 5:00 PM
Monday ............. October 30 ........ 7:30 AM - 5:00 PM
Tuesday ............ October 31 ........ 8:00 AM - 5:00 PM
Wednesday ......... November 1 ........ 8:00 AM - 5:00 PM
Thursday ........... November 2 ........ 8:00 AM - 5:00 PM
Friday .............. November 3 ........ 8:00 AM - 10:00 AM

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 as follows:

Member: White  Spouse: Beige  Nonmember: Peach
Student: Blue  Fellow: White
# DAILY EVENTS

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

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14 ★ Denotes Theme Session: Marine and Water Resources Facilities
MONDAY, October 30, 1989

8:30 AM - 1:00 PM
117  Tolerance  Torrey 3
229  Controlled Low-Strength Material  Cardiff
344  Circular Prestressed Concrete Structures  Torrey 2

8:30 AM - 5:00 PM
543  Concrete Piling  Encinitas

10:00 AM - 11:30 AM
213-C  By-Product Lightweight Aggregates  Solana
308-S  Specification  Del Mar

10:00 AM - 1:00 PM
E902A  Field Technician I  Leucadia
211-D  High Strength  Newport Beach
211-E  Evaluation  Desert Springs
212  Chemical Admixtures  Columbia 2,3
307  Chimneys  Oceanside
318  Standard Building Code (Mtg.1)  Santa Rosa
347  Formwork for Concrete  Green Room
437  Strength Evaluation of Existing Concrete Structures  Point Loma

10:00 AM - 5:00 PM
552  Cement Grouting  Columbia 1

11:30 AM - 1:00 PM
308  Curing Concrete  Del Mar
325-F  316R-82 Report  Exec. Conf. Rm.
504  Joint Sealants and Joint Systems  Board Room

2:00 PM - 3:30 PM
E702  Designing Concrete Structures  La Jolla
E902B  Certification Shotcrete Nozzlemen  Exec. Conf. Rm.
JBC  International Joints and Bearings Research Council  Board Room
118-UG  Computer User Group  Rancho Las Palmas
325-G  Paver Block Pavements  Cardiff
367  Precast Conc. Chimneys  Oceanside

2:00 PM - 5:00 PM
E703  Construction Practices  Desert Springs
201  Durability of Concrete  Torrance
228  Nondestructive Testing of Concrete  Santa Rosa
302  Construction of Concrete Floors  Columbia 2,3
349  Subcommittee 1  Torrey 3
358  Concrete Guideways  Irvine
533  Precast Panels  Del Mar
546-1  Underwater Repair  Carlsbad
548-A  Polymer Modified Conc.  Green Room

2:00 PM - 5:00 PM  TECHNICAL SESSIONS
Research in Progress (123)  Marriott Hall 1
Seismic Base Isolation (554)  Marriott Hall 5
★ Perspective on Marine Construction (ACI San Diego International Chapter)  Marriott Hall 2

★ Denotes Theme Session: Marine and Water Resources Facilities
### MONDAY, October 30, 1989

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**ROOMS**

- Columbia 2
- Solana
- Carlsbad
- Santa Rosa
- Leucadia
- Torrey 1
- Columbia 1
- Manchester 2
- Point Loma
- Del Mar
- Warner Center
- Marriott Hall 2
- Marriott Hall 5
- Marriott Hall 1
- Marriott Hall 6
- San Diego A
- Pacific
- Green Room
- Rancho Las Palmas
- Newport Beach
- Oceanside
- Los Angeles
- Manchester 1
- Columbia 3
- La Jolla
- Pacific
- Santa Rosa
- Rancho Las Palmas
- Newport Beach
- Green Room
- Solana

* Denotes Theme Session: Marine and Water Resources Facilities
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<td>Ad hoc Comm. on Radon Control Columbia 2</td>
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<td>Contractors' Day Luncheon San Diego C $18.00/person</td>
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<td>211-A Ed and Coordination Desert Springs</td>
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<td>215 Fatigue of Concrete Newport Beach</td>
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<td>Spreadsheets on Concrete Technology Marriott Hall 6</td>
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<tr>
<td>and Design—Part II (E705)</td>
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<td>★ Concrete Construction Seminar (CLC) Marriott Hall 2</td>
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<tr>
<td>Open Paper Session—Part II: Structural Behavior and Testing (TAC) San Diego A</td>
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<td>Design of Slabs on Grade Green Room 360</td>
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* Denotes Theme Session: Marine and Water Resources Facilities
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<td><strong>EDUCATIONAL SEMINAR</strong></td>
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<td>Marriott Hall 6</td>
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<td>Forum: Computer-Aided Design and Drafting (CAD/D) Systems (E705)</td>
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<td>8:30 AM - 9:45 AM</td>
<td>Rap Session and Continental Breakfast</td>
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<td>10:00 AM - NOON</td>
<td>General Session</td>
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<td>Bridge Construction</td>
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<td>Rehabilitation</td>
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<td>Bond and Development of Reinforcement</td>
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<td>Prestressed Concrete</td>
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<td>Lateral Forces</td>
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<td>Adhesives for Concrete</td>
<td>Rancho Las Palmas</td>
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<td>Precast Conc. Structures</td>
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<td><strong>TECHNICAL SESSIONS</strong></td>
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<td>History of Concrete (120)</td>
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<td>Torrey 2,3</td>
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<td>Scaled Models of Special Structures (444)</td>
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<td>Offshore and Marine Concrete (357)</td>
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* Denotes Theme Session: Marine and Water Resources Facilities
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<td>2:00 PM - 5:30 PM TECHNICAL SESSION</td>
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<tr>
<td></td>
<td>Paul Kieger International Symposium on Performance of Concrete - Part I</td>
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<tr>
<td></td>
<td>(201, 222)</td>
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<td>2:00 PM - 6:30 PM</td>
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<td>E902E Level III Conc. Insp.</td>
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<td>3:30 PM - 6:30 PM</td>
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<td>211 Proportioning Concrete Mixtures</td>
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<td>224 Cracking</td>
<td>Carlsbad</td>
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<td>5:00 PM - 6:30 PM</td>
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<td>121 Quality Assurance</td>
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<td>209 Creep and Shrinkage in Concrete</td>
<td>Rancho Las Palmas</td>
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<td>233 Ground Slag in Concrete</td>
<td>Pacific</td>
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<td>343/348 Task Committee on LRFD</td>
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<td>6:30 PM - 8:00 PM</td>
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<td>Concrete Mixer (Sponsored by the ACI San Diego International Chapter)</td>
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<td>232-A Natural Pozzolans in Concrete</td>
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<td>122 Energy Conservation</td>
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<td>124 Concrete Esthetics</td>
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<td>355 Anchorage to Concrete</td>
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<td>439 Steel Reinforcement</td>
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<td>546 Repair of Concrete</td>
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<td>548-B Polymer Conc. Overlays</td>
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<td>Marriott Hall 4</td>
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<td>Paul Kieger International Symposium on Performance of Concrete - Part II</td>
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<td></td>
<td>(201, 222)</td>
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<td>8:30 AM - 1:00 PM</td>
<td>Torrance</td>
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<td>305 Hot Weather Concreting</td>
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<td>359-A Design</td>
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<td>359-B Materials Construction and Examination</td>
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<td>343-A Code Revision</td>
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<td>125 Lunar Concrete</td>
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Denotes Theme Session: Marine and Water Resources Facilities
THURSDAY, November 2, 1989

9:00 AM - NOON  TECHNICAL SESSIONS
Effect of Concrete Constituents and Environment on Creep and Shrinkage - Part I (209)
Design of Beam to Column Joints - Part I: Design of Joints in Seismic Zones
Cooperative U.S./Japan/New Zealand/China Project (352)
New Developments in Measuring, Mixing, Transporting and Placing Concrete - Part I (304)
Thin-Section Fiber Reinforced Concrete and Ferrocement Products - Material Properties and Applications - Part I (544, 549)

9:00 AM - 6:00 PM
Board of Direction
Manchester 1, 2

10:00 AM - 11:30 AM
225-2 Expert Systems
232 Fly Ash and Natural Pozzolans in Concrete
Leucadia
Santa Rosa

11:30 AM - 1:00 PM
225-1 Math. Modeling
224 Task Group/Joints Report
435 Deflection
444 Models of Concrete Structures (Mtg.1)
517 Accelerated Curing
Leucadia
Columbia 1
Solana
Encinitas
Century City

12:30 PM - 1:30 PM
357-1 Serviceability
Torrey 1

1:30 PM - 2:30 PM
357-2 Strength Design
Torrey 1

2:00 PM - 3:30 PM
123 Research
224 Editorial Subcommittee
225 Hydraulic Cements
444 Models of Concrete Structures (Mtg.2)
446-2 Fracture Mechanics and the Code
446-4 Dynamic Fracture
Point Loma
Columbia 1
Leucadia
Encinitas
Carlsbad
Carlsbad

2:00 PM - 5:00 PM
234 Silica Fume
303 Architectural Concrete
359 Nuclear Vessels
442-SC Inelastic Design
548 Polymers in Concrete
Torrance
Solana
Pacific
Century City
Santa Rosa

* Denotes Theme Session: Marine and Water Resources Facilities 21
### THURSDAY, November 2, 1989

#### 2:00 PM - 5:00 PM  TECHNICAL SESSIONS

- **Effect of Concrete Constituents and Environment on Creep and Shrinkage** - Part II (209)
- **Design of Beam to Column Joints** - Part II (352)
- **New Developments in Measuring, Mixing, Transporting and Placing Concrete** - Part II (304)
- **Thin-Section Fiber Reinforced Concrete and Ferrocement Products - Material Properties and Applications** - Part II (544, 549)

- **2:00 PM - 5:30 PM**  TECHNICAL SESSION
  - Paul Kliger International Symposium on Performance of Concrete - Part III (201, 222)

- **2:00 PM - 6:30 PM**
  - 306 Cold Weather Concreteing
  - **2:30 PM - 3:30 PM**
    - 357 Marine Structures
  - **3:30 PM - 6:30 PM**
    - 340 Design Aids for ACI Building Codes
    - 357 Offshore and Marine Concrete
    - 421 Design of Concrete Slabs
    - 446 Fracture Mechanics
  - **6:30 PM - 7:00 PM**
    - Paul Kliger Reception (Cash Bar)

- **7:00 PM - 10:00 PM**
  - **7:00 PM - 10:00 PM**
    - Paul Kliger Dinner (Cash Bar Available)
    - $30.00/person

### FRIDAY, November 3, 1989

#### 9:00 AM - NOON  TECHNICAL SESSIONS

- **Fracture of Concrete Under Special Environments and Loadings** (446)
- **Effect of Concrete Constituents and Environment on Creep and Shrinkage** - Part III (209)
- **Paul Kliger International Symposium on Performance of Concrete** - Part IV (201, 222)
### NUMERICAL COMMITTEE MEETING SCHEDULE

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<th>DATE</th>
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<td>10/29</td>
<td>8:00 AM - 6:00 PM</td>
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<td>10/29</td>
<td>8:00 AM - 6:00 PM</td>
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<td>10/29</td>
<td>8:00 AM - 6:00 PM</td>
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<td>8:30 AM - 12:00 PM</td>
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<td>Field Technician I</td>
<td>10/30</td>
<td>10:00 AM - 1:00 PM</td>
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<td>10/30</td>
<td>2:00 PM - 6:30 PM</td>
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<td>3:30 PM - 6:30 PM</td>
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<td>Concrete Craftsmen</td>
<td>10/30</td>
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<td>7:00 PM-8:30 PM</td>
<td>Los Angeles</td>
</tr>
<tr>
<td>349</td>
<td>Subcommittee 3 (Mtg. 1)</td>
<td>10/30</td>
<td>2:00 PM-6:30 PM</td>
<td>Newport Beach</td>
</tr>
<tr>
<td>349</td>
<td>Subcommittee 3 (Mtg. 2)</td>
<td>10/30</td>
<td>7:00 PM-8:30 PM</td>
<td>Newport Beach</td>
</tr>
<tr>
<td>350</td>
<td>Environmental Structures</td>
<td>10/31</td>
<td>8:30 AM-1:00 PM</td>
<td>Del Mar</td>
</tr>
<tr>
<td>351-3</td>
<td>Equip. Foundations Static Equipment Foundations</td>
<td>10/31</td>
<td>8:30 AM-11:30 AM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>352</td>
<td>Joints</td>
<td>10/31</td>
<td>8:30 AM-1:00 PM</td>
<td>Warner Center</td>
</tr>
<tr>
<td>355</td>
<td>Anchorage</td>
<td>11/2</td>
<td>8:30 AM-11:30 AM</td>
<td>Point Loma</td>
</tr>
<tr>
<td>357</td>
<td>Offshore &amp; Marine Structures</td>
<td>11/2</td>
<td>3:30 PM-6:30 PM</td>
<td>Torrey 1</td>
</tr>
<tr>
<td>357-1</td>
<td>Serviceability</td>
<td>11/2</td>
<td>12:30 PM-1:30 PM</td>
<td>Torrey 1</td>
</tr>
<tr>
<td>357-2</td>
<td>Strength Design</td>
<td>11/2</td>
<td>1:30 PM-2:30 PM</td>
<td>Torrey 1</td>
</tr>
<tr>
<td>357-3</td>
<td>Marine Structures</td>
<td>11/2</td>
<td>2:30 PM-3:30 PM</td>
<td>Torrey 1</td>
</tr>
<tr>
<td>358</td>
<td>Guideways</td>
<td>10/30</td>
<td>2:00 PM-5:00 PM</td>
<td>Irvine</td>
</tr>
<tr>
<td>359</td>
<td>Nuclear Vessels</td>
<td>11/2</td>
<td>2:00 PM-5:00 PM</td>
<td>Pacific</td>
</tr>
<tr>
<td>359-A</td>
<td>Design</td>
<td>11/2</td>
<td>8:30 AM-1:00 PM</td>
<td>Pacific</td>
</tr>
<tr>
<td>359-B</td>
<td>Materials Construction and Examination</td>
<td>11/2</td>
<td>8:30 AM-1:00 PM</td>
<td>Oceanside</td>
</tr>
<tr>
<td>360</td>
<td>Slabs on Grade</td>
<td>10/31</td>
<td>2:00 PM-6:30 PM</td>
<td>Green Room</td>
</tr>
<tr>
<td>362</td>
<td>Parking Structures</td>
<td>10/31</td>
<td>8:30 AM-11:30 AM</td>
<td>Santa Rosa</td>
</tr>
<tr>
<td>363</td>
<td>High-Strength</td>
<td>10/31</td>
<td>8:30 AM-10:00 AM</td>
<td>Green Room</td>
</tr>
<tr>
<td>364</td>
<td>Rehabilitation</td>
<td>11/1</td>
<td>2:00 PM-5:00 PM</td>
<td>Warner Center</td>
</tr>
<tr>
<td>365</td>
<td>Service Life</td>
<td>10/31</td>
<td>2:00 PM-3:30 PM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>367</td>
<td>Precast Chimneys</td>
<td>10/30</td>
<td>2:00 PM-3:30 PM</td>
<td>Oceanside</td>
</tr>
<tr>
<td>368</td>
<td>Earthquake Resistance</td>
<td>10/31</td>
<td>3:30 PM-6:30 PM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>408</td>
<td>Bond and Development</td>
<td>11/1</td>
<td>2:00 PM-5:00 PM</td>
<td>Point Loma</td>
</tr>
<tr>
<td>421</td>
<td>Slabs</td>
<td>11/2</td>
<td>3:30 PM-6:30 PM</td>
<td>Bus. Center 7</td>
</tr>
<tr>
<td>423</td>
<td>Prestressed</td>
<td>11/1</td>
<td>2:00 PM-5:00 PM</td>
<td>Solana</td>
</tr>
<tr>
<td>435</td>
<td>Deflection</td>
<td>11/2</td>
<td>11:30 AM-1:00 PM</td>
<td>Solana</td>
</tr>
<tr>
<td>437</td>
<td>Strength of Structures</td>
<td>10/30</td>
<td>10:00 AM-1:00 PM</td>
<td>Point Loma</td>
</tr>
<tr>
<td>439</td>
<td>Steel Reinforcement</td>
<td>11/2</td>
<td>8:30 AM-11:30 AM</td>
<td>Solana</td>
</tr>
<tr>
<td>441</td>
<td>Columns</td>
<td>10/31</td>
<td>10:00 AM-1:00 PM</td>
<td>Columbia 3</td>
</tr>
<tr>
<td>442</td>
<td>Lateral Forces</td>
<td>11/1</td>
<td>2:00 PM-5:00 PM</td>
<td>Green Room</td>
</tr>
<tr>
<td>442-SC</td>
<td>Inelastic Design</td>
<td>11/2</td>
<td>2:00 PM-5:00 PM</td>
<td>Century City</td>
</tr>
<tr>
<td>444</td>
<td>Models (Mtg. 1)</td>
<td>11/2</td>
<td>11:30 AM-1:00 PM</td>
<td>Encinitas</td>
</tr>
<tr>
<td>444</td>
<td>Models (Mtg. 2)</td>
<td>11/2</td>
<td>2:00 PM-3:30 PM</td>
<td>Encinitas</td>
</tr>
<tr>
<td>445</td>
<td>Shear and Torsion</td>
<td>10/31</td>
<td>2:00 PM-6:30 PM</td>
<td>Warner Center</td>
</tr>
<tr>
<td>446</td>
<td>Fracture Mechanics</td>
<td>11/2</td>
<td>3:30 PM-6:30 PM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>446-2</td>
<td>Fracture Mechanics and the Code</td>
<td>11/2</td>
<td>2:00 PM-3:30 PM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>446-4</td>
<td>Dynamic Fracture</td>
<td>11/2</td>
<td>2:00 PM-3:30 PM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>447</td>
<td>Finite Element Analysis</td>
<td>11/2</td>
<td>7:00 PM-10:00 PM</td>
<td>Bus. Center 7</td>
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<tr>
<td>COMM.</td>
<td>COMMITTEE SHORT TITLE</td>
<td>DATE</td>
<td>TIME</td>
<td>ROOM</td>
</tr>
<tr>
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</tr>
<tr>
<td>503</td>
<td>Adhesives for Concrete</td>
<td>11/1</td>
<td>2:00 PM- 5:00 PM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>504</td>
<td>Joint Sealants</td>
<td>10/30</td>
<td>11:30 AM- 1:00 PM</td>
<td>Board Room</td>
</tr>
<tr>
<td>506</td>
<td>Shotcreting</td>
<td>10/31</td>
<td>2:00 PM- 6:30 PM</td>
<td>Solana</td>
</tr>
<tr>
<td>515</td>
<td>Coatings for Concrete</td>
<td>10/30</td>
<td>3:30 PM- 6:30 PM</td>
<td>La Jolla</td>
</tr>
<tr>
<td>517</td>
<td>Accelerated Curing</td>
<td>11/2</td>
<td>11:30 AM- 1:00 PM</td>
<td>Century City</td>
</tr>
<tr>
<td>523</td>
<td>Insulating and Cellular</td>
<td>10/31</td>
<td>10:00 AM-11:30 AM</td>
<td>Green Room</td>
</tr>
<tr>
<td>524</td>
<td>Plastering (Mtg. 1)</td>
<td>10/31</td>
<td>1:00 PM- 6:30 PM</td>
<td>Board Room</td>
</tr>
<tr>
<td>524</td>
<td>Plastering (Mtg. 2)</td>
<td>11/1</td>
<td>1:00 PM- 6:30 PM</td>
<td>Board Room</td>
</tr>
<tr>
<td>524</td>
<td>Plastering (Mtg. 3)</td>
<td>11/2</td>
<td>8:30 AM- 1:00 PM</td>
<td>Board Room</td>
</tr>
<tr>
<td>531</td>
<td>Concrete Masonry</td>
<td>10/31</td>
<td>2:00 PM- 5:00 PM</td>
<td>Columbia 3</td>
</tr>
<tr>
<td>533</td>
<td>Precast Panels</td>
<td>10/30</td>
<td>2:00 PM- 5:00 PM</td>
<td>Del Mar</td>
</tr>
<tr>
<td>543</td>
<td>Concrete Piling</td>
<td>10/30</td>
<td>8:30 AM- 5:00 PM</td>
<td>Encinitas</td>
</tr>
<tr>
<td>544</td>
<td>Fiber Reinforced Concrete</td>
<td>11/1</td>
<td>2:00 PM- 6:30 PM</td>
<td>Santa Rosa</td>
</tr>
<tr>
<td>544-1</td>
<td>Steel Fibers</td>
<td>10/31</td>
<td>8:30 AM- 10:00 AM</td>
<td>Newport Beach</td>
</tr>
<tr>
<td>544-2</td>
<td>Glass Fibers</td>
<td>10/31</td>
<td>8:30 AM- 10:00 AM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>544-3</td>
<td>Synthetic Fibers</td>
<td>10/31</td>
<td>10:00 AM-11:30 AM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>544-4</td>
<td>Vegetable Fibers</td>
<td>10/31</td>
<td>10:00 AM-11:30 AM</td>
<td>Newport Beach</td>
</tr>
<tr>
<td>544-5</td>
<td>Structural Design</td>
<td>10/31</td>
<td>11:30 AM- 1:00 PM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>544-6</td>
<td>State-of-the-Art</td>
<td>10/31</td>
<td>11:30 AM- 1:00 PM</td>
<td>Newport Beach</td>
</tr>
<tr>
<td>546</td>
<td>Repair of Concrete</td>
<td>11/2</td>
<td>8:30 AM- 11:30 AM</td>
<td>Columbia 2, 3</td>
</tr>
<tr>
<td>548</td>
<td>Polymers in Concrete</td>
<td>10/30</td>
<td>2:00 PM- 5:00 PM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>548-A</td>
<td>Polymer Modified Concrete</td>
<td>10/30</td>
<td>2:00 PM- 5:00 PM</td>
<td>Santa Rosa</td>
</tr>
<tr>
<td>548-B</td>
<td>Polymer Conc. Overlays</td>
<td>11/2</td>
<td>8:30 AM- 11:30 AM</td>
<td>Carlsbad</td>
</tr>
<tr>
<td>548-D</td>
<td>Sulfur Concrete</td>
<td>10/31</td>
<td>8:30 AM- 10:00 AM</td>
<td>La Jolla</td>
</tr>
<tr>
<td>548-E</td>
<td>Struct. &amp; Design Analysis of Polymer Concrete</td>
<td>10/31</td>
<td>10:00 AM- 1:00 PM</td>
<td>La Jolla</td>
</tr>
<tr>
<td>549</td>
<td>Ferrocement</td>
<td>10/31</td>
<td>11:30 AM- 1:00 PM</td>
<td>Green Room</td>
</tr>
<tr>
<td>550</td>
<td>Precast Conc. Structures</td>
<td>11/1</td>
<td>2:00 PM- 5:00 PM</td>
<td>Torrey 1</td>
</tr>
<tr>
<td>551</td>
<td>Trit-Up</td>
<td>11/2</td>
<td>8:30 AM- 5:00 PM</td>
<td>Rancho Las Palmas</td>
</tr>
<tr>
<td>552</td>
<td>Cement Grouting</td>
<td>10/30</td>
<td>10:00 AM- 5:00 PM</td>
<td>Columbia 1</td>
</tr>
<tr>
<td>554</td>
<td>Bearing Systems</td>
<td>10/30</td>
<td>8:30 AM-11:30 AM</td>
<td>Board Room</td>
</tr>
<tr>
<td>555</td>
<td>Removal and Reuse Ad hoc Comm. on Radon Control</td>
<td>10/31</td>
<td>11:30 AM- 2:00 PM</td>
<td>Columbia 2</td>
</tr>
</tbody>
</table>

**NOTE:** Committees not listed did not request a meeting at this convention.
SOCIAL ACTIVITIES
PROGRAM

SUNDAY, October 29, 1989
11:45 AM  Golf Tournament—The ACI San Diego International Chapter is hosting a golf tournament at Singing Hills, one of the most scenic courses in Southern California. See Spouse/Guest brochure for complete details. $60.00/person

1:00 PM – 5:00 PM  Spouse/Guest Registration—Registration will be held today in Marriott Hall at ACI’s designated registration area.

5:30 PM – 7:00 PM  Opening Reception—Join us in San Diego Ballroom B,C for the Opening Reception. Sponsored by the ACI San Diego International Chapter.

MONDAY, October 30, 1989
8:30 AM – 11:00 AM: Marriott Hall 1,2 and
11:00 AM – 3:00 PM: Bayside Pavilion
Hospitality Room—A hostess will be available to register new guests and to answer any questions you might have. Continental breakfast will be available from 8:30 AM – 11:00 AM.

10:00 – 11:00 AM  Overview of San Diego—Attend a presentation in Marriott Hall 5,6 that will give you an overview of San Diego. There will be informational handouts on places to visit of cultural interest, restaurants and shopping. No charge

3:00 PM – 5:00 PM  Afternoon Tea—Being hosted by Mrs. Dora Zia, visit President and Mrs. Zia’s suite, the Marriott Suite, for our Afternoon Tea. Casual attire.

TUESDAY, October 31 through
THURSDAY, November 2, 1989
8:30 AM – 3:00 PM: Bayside Pavilion
Hospitality Room—A hostess will be available to register new guests and to answer any questions you might have. Continental breakfast will be available from 8:30 AM – 11:30 AM.

TUESDAY, October 31, 1989
10:00 AM – 1:30 PM  Culinary Arts Demonstration and Luncheon at the Hanalei Hotel—Chef Rolf Jung, Executive Chef of the Atlas Hotel Chain, will demonstrate his expertise in the culinary arts. Enjoy the luncheon that follows. See the Spouse/Guest brochure for complete details. $22.00/person

11:00 AM – 3:00 PM  Jewel of the Sea Shopping—Enjoy a walking tour of La Jolla’s shopping district on Prospect and Girard Streets. The “village” offers a variety of shops, galleries and boutiques that display everything from novelties to the works of famous artists, from classic tweeds to the most far-out modern fashions. Everyone falls in
love with La Jolla, "the Jewel," at first sight. See the Spouse/Guest brochure for complete details. $12.50/person

10:00 AM - 5:00 PM Enjoy it All!! Culinary Arts Demonstration, Luncheon at the Hanalei, and Jewel of the Sea Shopping — Make a day of it — and enjoy it all! $30.00/person

WEDNESDAY, November 1, 1989

9:00 AM - 1:00 PM Behind the Scenes at the San Diego Zoo— See the Spouse/Guest brochure for complete details. $28.00/person

10:00 AM - NOON General Session— Join us in Marriott Hall 3,4 for the General Session. Here you will enjoy our keynote speaker, Dr. Harold L. Hodgkinson, as he delivers his address, "Tomorrow's Engineers are Here Today." The General Session will also include the Phil M. Ferguson Lecture that will be presented by Professor Alan H. Mattock, entitled "Concrete—Challenge and Opportunity."

6:30 PM - 8:00 PM Concrete Mixer— Sponsored by the ACI San Diego International Chapter. Spend a festive evening with your friends and colleagues in Marriott Hall 3,4,5,6.

THURSDAY, November 2, 1989

9:30 AM - 1:30 PM Tijuana Shopping Spree— Visit Tijuana, a friendly city with shopping unlike any other. See the Spouse/Guest brochure for complete details. $14.50/person

9:30 AM - 1:30 PM A Splash at Sea World— Sea World brings life beneath the sea together with the world above it. See the Spouse/Guest brochure for complete details. $31.00/person

6:30 PM - 10:00 PM Paul Klieger Reception and Dinner— Join ACI as we honor Paul Klieger, an Honorary Member of the Institute with almost 50 years of membership. Please come and enjoy one another's company and pay tribute to a man whose dedication to ACI is respected by all. Tonight’s reception and dinner will be held in San Diego Ballroom A. Dinner $30.00/person (Cash bar available)

FRIDAY, November 3, 1989

8:30 - 10:00 AM Hospitality Room - Bayside Pavilion— Enjoy a continental breakfast while saying a fond farewell to your old friends and new acquaintances you have made during your stay in San Diego.

NOTE: Buses for tours will depart from the Marriott Hall driveway at the tour times listed. Refunds will only be given due to the cancellation of the tour.
TECHNICAL SESSION

MONDAY, October 30, 1989
2:00 PM - 5:00 PM
Room: Marriott Hall 1

RESEARCH IN PROGRESS

Sponsored by Committee 123

Session Chairman: Menashi D. Cohen
Associate Professor
School of Civil Engineering
Purdue University
West Lafayette, Indiana

Session Co-Chairman: Marwan A. Daye
Senior Staff Engineer
Bechtel Eastern Power Corporation
Gaithersburg, Maryland

Introduction
Menashi D. Cohen, Associate Professor, School of Civil Engineering, Purdue University, West Lafayette, Indiana

Bond of Epoxy Coated Reinforcement Under Cyclic Loading 2:00
Douglas R. Cleary, Graduate Student, School of Civil Engineering, Purdue University, West Lafayette, Indiana; Julio A. Ramirez, Assistant Professor, School of Civil Engineering, Purdue University, West Lafayette, Indiana

Response of Precast Columns to Reversed Cyclic Loading 2:20
Claude Pillette, Graduate Student, Department of Civil Engineering, McGill University, Montreal, Quebec, Canada; Denis Mitchell, Professor, Department of Civil Engineering, McGill University, Montreal, Quebec, Canada

Post-Tensioned Connections for Precast Load-Bearing Shear Wall Panels 2:40
Robin Hutchinson, Graduate Student, Department of Civil Engineering, University of Manitoba, Winnipeg, Manitoba, Canada; Sami Rozkalla, Professor and Head, Department of Civil Engineering, University of Manitoba, Winnipeg, Manitoba, Canada

Cyclic Heating Effects on Concrete Properties 3:00
V. Ramakrishnan, Professor, Department of Civil Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota; George Wu, Civil Engineer, Naval Civil Engineering Laboratory, Soils and Pavements Division, Port Hueneme, California; P.C. Punit, Graduate Student, South Dakota School of Mines and Technology, Rapid City, South Dakota

Behavior of High Volume Fly Ash Low-Strength Cement Composite 3:20
P. Balaguru, Professor, Department of Civil Engineering, Rutgers, The State University, Piscataway, New Jersey
TECHNICAL SESSION

MONDAY, October 30, 1989
2:00 PM – 5:00 PM
Room: Marriott Hall 1

RESEARCH IN PROGRESS

Sponsored by Committee 123

Natural Remanent Magnetization of Cement Paste, Mortar, and Concrete
3:40
Charles Farrell, Graduate Student, Department of Civil and Environmental Engineering, Cornell University, Ithaca, New York; Kenneth C. Hover, Associate Professor, Department of Civil and Environmental Engineering, Cornell University, Ithaca, New York; Peter Plumley, Department of Civil and Environmental Engineering, Cornell University, Ithaca, New York

The Effect of Polypropylene Fiber Addition on Statistical Reliability of Mechanical Properties of Mortar Bars
4:00
T. Elkorchi, Assistant Professor, Department of Civil Engineering, Worcester Polytechnic Institute, Worcester, Massachusetts; G. L. Leatherman, Worcester Polytechnic Institute, Worcester, Massachusetts; W. R. Bullock, Worcester Polytechnic Institute, Worcester, Massachusetts; D. A. Sunderland, Worcester Polytechnic Institute, Worcester, Massachusetts

Lightweight Aggregate for All Applications
4:20
V. Novokshchenov, Consultant, Concrete Clinic International, Buffalo Grove, Illinois; W. Whitcomb, Manager, 3M, St. Paul, Minnesota

Reusability and Repair Evaluation of 20 Year-Old AASHTO Type III Girders
4:40
Steven A. Olson, Research Assistant, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota; Catherine W. French, Assistant Professor, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota; Roberto T. Leon, Associate Professor, Department of Civil and Mineral Engineering, Minneapolis, Minnesota
TECHNICAL SESSION

MONDAY, October 30, 1989
2:00 PM – 5:00 PM
Room: Marriott Hall 5

SEISMIC BASE ISOLATION

Sponsored by Committee 554

Session Moderator: Edward Robert Fyfe
President
Fyfe Associates, Inc.
Del Mar, California

Session Co-Moderator: Jim Iverson
Engineer
The Consulting Engineers Group
Napa, California

Status of "Guide to Earthquake Isolators for Concrete Structures"  2:00
Edward R. Fyfe, President, Fyfe Associates, Inc., Del Mar, California

Acceptance of Base Isolation  2:10
Alexander Tarics, President, Base Isolation Consultants, San Francisco, California

Base Isolation in a Zone Four Eight-Story Building  2:25
Jim Elm, Engineer, Englekirk and Hart, Los Angeles, California

Seismic Isolation Design Practice  2:40
Thomas L. Anderson, Engineer, Fluor Daniel Corporation, Irvine, California

Seismological and Geotechnical Issues in Base Isolation — Use of Neoprene Case History  2:55
T. P. Singh, President, Geospectra, Inc., Richmond, California

Recent Experience in Retrofit  3:10
Nick Forell, Forell and Elsesser, San Francisco, California

Base Isolation in Japan  3:25
James Kelly, University of California at Berkeley, Berkeley, California

Base Isolation in Nuclear Application  3:40
Fred Tajrian, Engineer, Bechtel, Inc., San Francisco, California

U.S.C. Hospital — Case History  3:55
Jeff Asher, Engineer, KPFF Engineers, Santa Monica, California

Overview of Bridge Applications  4:10
Ronald Mayes, Engineer, DLS, Berkeley, California
TECHNICAL SESSION

MONDAY, October 30, 1989
2:00 PM – 5:00 PM

PERSPECTIVE ON MARINE CONSTRUCTION

Sponsored by the ACI San Diego International Chapter

Session Chairman: Donald R. Libby
Structural Engineer
Libby Engineers
San Diego, California

Session Moderator: Frieder Seible
Professor
AMES
University of California at San Diego
San Diego, California

Ellen Browning Scripps Memorial Pier 2:00
Ronald A. Dahlin, Structural Engineer, Ferver Engineering, San Diego, California

Waterfront Construction – WESTDIV’s Experience 2:35
Domenic A. Zigan, Head Structural Branch, Western Division, NAVFAC, San Bruno, California

Construction of Shamu 1987 3:00
David J. Akers, Civil Engineer, Pre-Mixed Concrete Company, San Diego, California

International Experience with the Performance of Concrete in the Marine Environment 3:25
Ben C. Gerwick, Professor and Chairman, Ben C. Gerwick, Inc., San Francisco, California

THEME SESSION
EDUCATIONAL SEMINAR

MONDAY, October 30, 1989
2:00 PM - 5:30 PM
Room: Manchester 1, 2

EDUCATOR/STUDENT PROGRAM AND SEMINAR

Sponsored by Committee E801

Session Moderator: Noel J. Everard
Consulting Engineer
Arlington, Texas

Introduction 2:00
Noel J. Everard, Consulting Engineer, Arlington, Texas

What Civil Engineering Students Should Learn
About Structures 2:10
Douglas D. Lee, Consulting Engineer, Fort Worth, Texas

What Civil Engineering Students Should Learn
About Structures 2:30
James M. Shilstone, Sr., Shilstone and Associates, Inc., Dallas, Texas

Awarding of Plaques 2:50
Noel J. Everard, Consulting Engineer, Arlington, Texas

Beam Testing Competition 3:40
David R. Jenkins, Professor, University of Central Florida, Winter Park, Florida
CONTROLLD LOW-STRENCH MATERIAL: ENVIRONMENTAL AND CONSTRUCTION SOLUTIONS

Sponsored by Committees 232 and 229

Session Chairman: Peter G. Snow
Director, Technical Marketing
Monex Resources, Inc.
San Antonio, Texas

Introduction 2:00
Peter G. Snow, Director, Technical Marketing, Monex Resources, Inc., San Antonio, Texas

The Utilization of Coal Combustion By-Products as Pipe Embedment and Backfill 2:05
Bill Gehrmann, Director of Engineering, Ash Management Division of JTM Industries, Houston, Texas; Bob Sparacino, Director of Product Development, JTM Industries, Marietta, Georgia

Controlled Low-Strength Material Covers Metro Underground Transit Stations 2:35

Environmental Uses of Controlled Low-Strength Materials 3:05
Ronald L. Larsen, President, Mid-West Fly Ash and Materials, Inc., Council Bluffs, Iowa

Project Ashreef: Coal Ash Materials as a Habitat for Fish and Oysters 3:35
Kent S. Price, Associate Dean, College of Marine Studies, University of Delaware, Lewes, Delaware

A Common Sense Approach to Waste Solidification 4:05

Use of Controlled Low-Strength Material Fly Ash Slurry for Filling Abandoned Underground Facilities 4:35
Tarun R. Naik, Director, Center for By-Products Utilization and Associate Professor, Department of Civil Engineering, The University of Wisconsin-Milwaukee, Milwaukee, Wisconsin; Bruce W. Ramme, Senior Project Engineer, Wisconsin Electric Power Company, Milwaukee, Wisconsin; Henry J. Kolbeck, Assistant Director, Center for By-Products Utilization, The University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Coal Fly Ash in Waste Stabilization Procedures 5:05
Samuel S. Tyson, Director of Technical Services, American Coal Ash Association, Washington, D.C.; Roger D. Walker, Principal Structural Engineer, Cincinnati Gas and Electric Company, Cincinnati, Ohio
## WHERE'S THAT MEETING ROOM?

<table>
<thead>
<tr>
<th>ROOM</th>
<th>BUILDING</th>
<th>LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaheim</td>
<td>Marriott Pavilion</td>
<td>Lobby Level</td>
</tr>
<tr>
<td>Atlanta</td>
<td>Marriott Pavilion</td>
<td>Lobby Level</td>
</tr>
<tr>
<td>Bayside Pavilion</td>
<td>South Tower</td>
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<tr>
<td>Bayside Pavilion -</td>
<td>South Tower</td>
<td>Lobby Level</td>
</tr>
<tr>
<td>Poolside (Use Catwalk)</td>
<td>South Tower</td>
<td>Lobby Level</td>
</tr>
<tr>
<td>Board Room</td>
<td>South Tower</td>
<td>Level 3</td>
</tr>
<tr>
<td>Business Center 1-8</td>
<td>South Tower</td>
<td>Level 3</td>
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<tr>
<td>Cardiff</td>
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<td>Level 3</td>
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<tr>
<td>Carlsbad</td>
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<td>Level 3</td>
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<tr>
<td>Century City</td>
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<td>Chicago</td>
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<tr>
<td>Columbia 1-3</td>
<td>North Tower</td>
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<tr>
<td>Del Mar</td>
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<tr>
<td>Desert Springs</td>
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<td>Level 4</td>
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<tr>
<td>Encinitas</td>
<td>South Tower</td>
<td>Level 3</td>
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<tr>
<td>Executive Conference Room</td>
<td>South Tower</td>
<td>Level 3</td>
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<tr>
<td>Green Room</td>
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<td>Irvine</td>
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<tr>
<td>La Jolla</td>
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<tr>
<td>Leucadia</td>
<td>South Tower</td>
<td>Level 1</td>
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<td>Los Angeles</td>
<td>South Tower</td>
<td>Level 4</td>
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<tr>
<td>Manchester 1-2</td>
<td>North Tower</td>
<td>Lobby Level</td>
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<tr>
<td>Marriott Hall 1-6</td>
<td>Marriott Pavilion</td>
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<tr>
<td>New York</td>
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<td>Lobby Level</td>
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<tr>
<td>Newport Beach</td>
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<td>Level 4</td>
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<td>Oceanside</td>
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<td>Orlando</td>
<td>Marriott Pavilion</td>
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<td>Pacific</td>
<td>South Tower</td>
<td>Level 1</td>
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<td>Point Loma</td>
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<td>Rancho Las Palmas</td>
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<td>San Diego Ballroom A,B,C</td>
<td>North Tower</td>
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<td>San Francisco</td>
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<tr>
<td>Santa Rosa</td>
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<td>Level 1</td>
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<td>Torrance</td>
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<td>Torrey 1-3</td>
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<tr>
<td>Warner Center</td>
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<td>Level 4</td>
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**NOTE:** See the map of the hotel layout in your convention registration package.
**Personal Log**
**1989 Fall Convention**

Delegate's Name

**Sunday, October 29, 1989**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>5:30 PM</td>
<td>Opening Reception</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>San Diego Ballroom B. C.</td>
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**Monday, October 30, 1989**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 AM</td>
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<td>10:00 AM</td>
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<td>2:00 PM</td>
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<td>3:30 PM</td>
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<tr>
<td>2:00 PM</td>
<td>Sessions/Seminars:</td>
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<tr>
<td>5:00 PM</td>
<td>Research in Progress</td>
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<tr>
<td></td>
<td>Seismic Base Isolation</td>
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<td></td>
<td>Perspective on Marine Construction</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Session/Seminar:</td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Educator/Student Program and Seminar</td>
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<tr>
<td></td>
<td>HOT TOPIC Controlled Low-Strength Material</td>
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<tr>
<td></td>
<td>Environmental and Construction Solutions</td>
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<tr>
<td>3:30 PM</td>
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<td>5:00 PM</td>
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**Tuesday, October 31, 1989**

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<td>10:00 AM</td>
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<tr>
<td>9:00 AM</td>
<td>Sessions/Seminars/Forums:</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Forum: Concrete Construction</td>
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<tr>
<td></td>
<td>Rehabilitation of Marine and Water Resources Facilities</td>
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<tr>
<td></td>
<td>State-of-the-Art Concrete Bridges</td>
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<tr>
<td></td>
<td>Spreadsheets on Concrete Technology and Design - Part I</td>
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<tr>
<td></td>
<td>Open Paper Session - Part I</td>
</tr>
</tbody>
</table>

* Denotes Theme Session: Marine and Water Resources Facilities
Tuesday, October 31, 1989

10:00 AM -
11:30 AM

11:30 AM -
1:00 PM

12:00 PM -
2:00 PM  Contractors' Day Luncheon  San Diego Ballroom C

1:00 PM -
2:00 PM

2:00 PM -
3:30 PM

2:00 PM -
3:30 PM  Sessions/Seminars:

5:00 PM  Concrete Polymer Materials in Marine Environments
          State-of-the-Industry, Cast-in-Place Concrete Pipe
          Spreadsheets on Concrete Technology and Design - Part II
          Concrete Construction Seminar
          Open Paper Session - Part II

3:30 PM -
5:00 PM

5:00 PM -
6:30 PM

6:30 PM -
8:00 PM

7:30 PM -
Forums:
8:00 PM  Forum: Sealing Compounds for Concrete Surfaces
          Forum: Computer-Aided Design and Drafting (CAD/D) Systems

Wednesday, November 1, 1989

7:00 AM -
8:30 AM

8:30 AM -
9:45 AM  Rap Session Breakfast  Marriott Hall 1, 2

10:00 AM -
12:00 PM  General Session  Marriott Hall 3, 4

1:00 PM -
2:00 PM

2:00 PM -
3:30 PM

2:00 PM -
3:30 PM  Sessions/Seminars:

5:00 PM  History of Concrete
          Anchorage to Concrete
          Scaled Models of Special Structures
          Offshore and Marine Concrete
          Paul Kleger International Symposium on Performance of Concrete - Part I

3:30 PM -
5:00 PM

5:00 PM -
6:30 PM

6:30 PM -
8:00 PM  Concrete Mixer  Marriott Hall 3, 4, 5, 6

* Denotes Theme Session: Marine and Water Resources Facilities
Thursday, November 2, 1989

7:00 AM -  8:30 AM

8:30 AM -  10:00 AM

9:00 AM -  12:00 PM  **Sessions/Seminars:**
Paul Klieger International Symposium on Performance of Concrete – Part II
(begins 8:30 AM)

Effect of Concrete Constituents and Environment on Creep and Shrinkage – Part I

Design of Beam to Column Joints – Part I

New Developments in Measuring, Mixing, Transporting and Placing Concrete – Part I

Thin-Section Fiber Reinforced Concrete and Ferrocement Products – Material Properties and Applications – Part I

1:00 PM -  2:00 PM

2:00 PM -  3:30 PM

2:00 PM -  5:30 PM  **Sessions/Seminars:**
Paul Klieger International Symposium on Performance of Concrete – Part III

Effect of Concrete Constituents and Environment on Creep and Shrinkage – Part II

Design of Beam to Column Joints – Part II

New Developments in Measuring, Mixing, Transporting and Placing Concrete – Part II

Thin-Section Fiber Reinforced Concrete and Ferrocement Products – Material Properties and Applications – Part II

3:30 PM -  5:00 PM

5:00 PM -  6:30 PM

6:30 PM -  10:00 PM  **Paul Klieger Reception / Dinner**
San Diego Ballroom A

Friday, November 3, 1989

7:00 AM -  8:30 AM

8:30 AM -  10:00 AM

9:00 AM -  12:00 PM  **Sessions/Seminars:**
Fracture of Concrete Under Special Environments and Loadings

Effect of Concrete Constituents and Environment on Creep and Shrinkage – Part III

Paul Klieger International Symposium on Performance of Concrete – Part IV

10:00 AM -  11:30 AM

11:30 AM -  12:00 PM
CONTRACTORS’ DAY

TUESDAY, October 31, 1989
9:00 AM - 12:00 NOON
Room: Marriott Hall 2

FORUM: CONCRETE CONSTRUCTION
Sponsored by the TAC Construction Review Committee

Session Chairman: Joseph A. Dobrowolski
Civil Engineer
Concrete Consultant
Altadena, California

Living With Floor Tolerances
John Rochford, Construction Manager,
Snyder Langston Builders, Irvine, California

Construction of the Los Angeles County Regional
Transportation System
Ed McSpedon, Director of Design and Construction,
Los Angeles County Transportation Commission

Underwater Paving of the Coachella Canal
Conway Narby, Area Manager,
Kiewit Pacific, Santa Fe Springs, California

Producing Exposed Aggregate Finishes on Tilt-Up Panels
Using Retarders
Ron Butterworth, Technical Representative,
Fosroc-Preco, Plainview, New York

An Overview of ACI’s Concrete Craftsman Series Booklet 3:
“Supported Beams and Slabs”
Peter D. Courtois, Senior Vice President - Engineering,
Dayton Superior Corporation, Miamisburg, Ohio

CONTRACTORS’ DAY LUNCHEON
Topic: “Transportation in the 1990s”
Room: San Diego Ballroom C
Cost: $18.00/person
12:00 NOON - 2:00 PM

Speaker: Russell Lightcap, Chief, Division of Project
Development, California Department of Transportation

Everyone is welcome at the Contractors’ Day Luncheon—it’s
not just for contractors. Join the session speakers and many
top ACI members for a fine meal and an interesting talk on
future concrete construction by the California Department of
Transportation.

Purchase tickets in advance at the ACI Registration Desk
CONTRACTORS' DAY

TUESDAY, October 31, 1989
2:00 PM – 5:00 PM

Room: Marriott Hall 2

CONCRETE CONSTRUCTION SEMINAR
Sponsored by the Construction Liaison Committee

Session Chairman: William R. Phillips
Project Manager
Yeargin Construction Company
Simpsonville, South Carolina

Those Little Failures That Cost Millions
2:00
Dov Kaminetzky, President, Feld, Kaminetzky & Cohen,
New York, New York

Pumping Lightweight Concrete 1038 ft in a Single Vertical Lift
2:30
C. Terry Dooley, Vice President,
Morley Construction Company, Los Angeles, California

Bad Concrete or Bad Testing?
3:00
Ken W. Day, Concrete Consultant,
Concrete Advice Pty. Ltd., Croydon, Victoria, Australia

Water-Cement Ratio is Passé
3:30
Robert Barton, Executive Vice President and C.E.O.,
J.H. McNamara Inc., Allston, Massachusetts

Elevated Floor Tolerances
4:00
Eldon Tipping, President,
Structural Services Inc., Dallas, Texas

Contractors' Day
Luncheon Menu
Spinach Salad with Poppyseed Dressing
Swordfish with Cilantro Sauce
Julienne of Carrots
Wild and White Rice
Rolls and Butter
"Little Devil"
(Chocolate Fudge Brownie,
Vanilla Ice Cream with Hot Fudge)
Coffee, Tea and
Freshly Brewed Decaffeinated Coffee
TECHNICAL SESSION

TUESDAY, October 31, 1989
9:00 AM - 12:00 NOON
Room: Marriott Hall 5

REHABILITATION OF MARINE AND WATER RESOURCES FACILITIES
Sponsored by Committee 364

Session Chairman: James E. McDonald
Research Civil Engineer
Concrete Technology Division
Waterways Experiment Station
Vicksburg, Mississippi

Rehabilitation of the Foundation of the North Rankin A Offshore Platform
9:00
Dale Berner, Consulting Engineer, San Francisco, California

Ontario Power Generating Station - Headworks Rehabilitation - 1986
9:30
Nick P. Bada, Field Supervisor, Ontario Hydro, Pickering, Ontario, Canada

Underwater Repair of Red Rock Dam with Concrete Containing an Anti-Washout Admixture
10:00
Billy D. Neeley, Civil Engineer, Waterways Experiment Station, Vicksburg, Mississippi; Jerry Wickersham, Concrete Technologist, U.S. Army Engineer District, Rock Island, Illinois

Crack Sealing Repairs at Upper Stillwater Dam
10:30
Glenn Smoak, Research Civil Engineer, Bureau of Reclamation, Denver, Colorado

Remedial Waterstops that Substantially Reduce Water Leakage
11:00
David L. Smedema, Technical Representative, Gelco Services, Salem, Oregon; Stephen T. Waring, Manager, Gelco Services, Kent, Washington

THEME SESSION ★
STATE-OF-THE-ART CONCRETE BRIDGES
Sponsored by Committees 343 and 345

Session Chairman: John H. Clark
Chief Bridge Engineer
Andersen Bjornstad Kane Jacobs, Inc.
Seattle, Washington

Design and Construction Specification for Segmental
Concrete Bridges 9:00
Clifford L. Freyermuth, President, Clifford L. Freyermuth, Inc.,
Phoenix, Arizona

Alternative Methods to Reduce Bridge Costs in California 9:25
James E. Roberts, Chief, Division of Structures, CALTRANS,
Sacramento, California

The Rehabilitation and Cathodic Protection of the Oregon Inlet
Bridge in North Carolina 9:50
Gerald M. White, Structures Project Engineer, Department of
Transportation, Raleigh, North Carolina

State-of-the-Art Elastomeric Bridge Bearing Design 10:30
Charles W. Roeder, Professor, University of Washington, Seattle,
Washington; John F. Stanton, Associate Professor, University of
Washington, Seattle, Washington

New AASHTO Design Specifications for Concrete Bridges 10:55
R.C. Cassano, Special Projects Engineer, Imbsen and Associates,
Sacramento, California

Seismic Energy Dissipation in Partially Isolated
Concrete Bridges 11:20
Mary W. Goodson, Dynamic Isolation Systems, Berkeley, California;
Trevor E. Kelly, Dynamic Isolation Systems, Berkeley, California;
Ronald L. Mayes, Dynamic Isolation Systems, Berkeley, California;
Richard P. Knight, Dynamic Isolation Systems, Berkeley, California

Avoiding the Demons Lurking in Prestressed Bridges 11:45
Charles Seim, Principal, T.Y. Lin International, San Francisco,
California; James Tai, Principal, T.Y. Lin International, San
Francisco, California
EDUCATIONAL SEMINAR

TUESDAY, October 31, 1989
9:00 AM – 12:00 NOON
Room: Marriott Hall 6

SPREADSHEETS ON CONCRETE
TECHNOLOGY AND DESIGN—PART I

Sponsored by Committee E705

Session Chairman: Bob Barnett
Bob Barnett, P.E.
Cropwell, Alabama

Introduction
Bob Barnett, Bob Barnett, P.E., Cropwell, Alabama

Spreadsheet to Calculate Wind Forces on Frames per the
Standard Building Code
Ronald E. Barnett, Boyle Engineering, Orlando, Florida

Concrete Estimating Spreadsheet
Mark Donaldson, Senior Student, Department of Construction,
Southern Illinois University at Edwardsville, Edwardsville, Illinois;
Luke M. Snell, Professor and Chairman, Department of
Construction, Southern Illinois University at Edwardsville,
Edwardsville, Illinois; Robert S. Pocera, Associate Professor,
Department of Construction, Southern Illinois University at
Edwardsville, Edwardsville, Illinois

Spreadsheet Templates for Estimating, Adjusting, Analyzing
and Selecting Mixture Proportions
Mikael P. J. Olsen, Principal, Jexen Engineering Services, Bryan,
Texas; Ronald L. Dilly, Assistant Professor, College of Technology,
University of Houston, Houston, Texas

A Lotus Spreadsheet Mode for Using ACI 214
James M. Shilstone, Jr., Vice President, Shilstone and Associates,
Inc., Dallas, Texas

Panel Discussion

NOTE: Part II of Spreadsheets on Concrete Technology and
Design will be presented on Tuesday, October 31, 1989 from
2:00 PM to 5:00 PM in Marriott Hall 6.
TECHNICAL SESSION

TUESDAY, October 31, 1989
9:00 AM - 12:00 NOON
Room: San Diego Ballroom A

OPEN PAPER SESSION - PART I:
MATERIAL PROPERTIES AND
STRUCTURAL PERFORMANCE

Sponsored by TAC

Session Chairman: Roberto T. Leon
Associate Professor
Department of Civil and Mineral Engineering
University of Minnesota
Minneapolis, Minnesota

Session Co-Chairperson: Sharon Wood
Assistant Professor
Department of Civil Engineering
University of Illinois
Urbana, Illinois

An Analysis of the Concrete Strength Versus Water-Cement Ratio Relationship
9:00
Sandor Popovics, Professor, Department of Civil Engineering, Drexel University, Philadelphia, Pennsylvania

Control of Plastic Shrinkage Cracking During Cold Weather Concreting Through the Use of Freezing Weather Admixture
9:25
E. Senbeta, Manager, Master Builders, Cleveland, Ohio; Mark A. Bury, Research Engineer, Master Builders, Cleveland, Ohio

Properties of Superplasticized Concrete Containing Different Types of Fly Ashes
9:50
Sukhvarsh Jerath, Associate Professor, Department of Civil Engineering, University of North Dakota, Grand Forks, North Dakota

Concrete Mixture Optimization
10:15
James M. Shilstone, Sr., President, Shilstone and Associates, Dallas, Texas

Ductility of Steel Fiber Reinforced Concrete
10:40
Antonio Nanni, Assistant Professor, Department of Architectural Engineering, The Pennsylvania State University, University Park, Pennsylvania; Jimmy S. Jwana, Graduate Student, Department of Architectural Engineering, The Pennsylvania State University, University Park, Pennsylvania; Chao-Kuang Ku, Graduate Student, Department of Architectural Engineering, The Pennsylvania State University, University Park, Pennsylvania

Excessive Deflections in Flat Plate Floors
11:05
Stephen J. Sopko, Associate, Ryan-Biggs Associates, Troy, New York

Nonmagnetic Concrete Pier for the U.S. Navy
11:30
V. K. Kumar, Project Manager, ABAM Engineers, Federal Way, Washington; Philip W. Birkeland, Senior Vice President, ABAM Engineers, Federal Way, Washington; Domenic A. Zigant, Professional Engineer, WESTNAVACENGCOM, Department of the Navy, San Bruno, California; Rich Cellon, Assistant ROICC, Department of the Navy, San Bruno, California
TECHNICAL SESSION

TUESDAY, October 31, 1989
2:00 PM – 5:00 PM
Room: San Diego Ballroom A

OPEN PAPER SESSION
PART II: STRUCTURAL BEHAVIOR AND TESTING

Sponsored by TAC

Session Chairman: Roberto T. Leon
Associate Professor
Department of Civil and Mineral Engineering
Minneapolis, Minnesota

Session Co-Chairperson: Sharon Wood
Assistant Professor
Department of Civil Engineering
University of Illinois
Urbana, Illinois

Tests on Reinforced Concrete Ice Resisting Wall Elements 2:00
Reed M. Ellis, Structural Engineer, The Engineers Collaborative,
Edmonton, Alberta, Canada; James G. MacGregor, Professor,
Department of Civil Engineering, University of Alberta, Edmonton,
Alberta, Canada

Dynamic Response of Frames with Slender Walls During Earthquakes 2:25
Marc Eberhard, Assistant Professor, Department of Civil Engineering,
University of Washington, Seattle, Washington

Stiffness of Reinforced Concrete Columns 2:50
S. A. Mirza, Professor, Department of Civil Engineering, Lakehead
University, Thunder Bay, Ontario, Canada

Strut and Tie Models for the Design of Pile Caps: An Experimental Study 3:15
Michael P. Collins, Professor, Department of Civil Engineering,
University of Toronto, Toronto, Ontario, Canada; Perry Adebar,
Graduate Student, Department of Civil Engineering, University of
Toronto, Toronto, Ontario, Canada

Nonlinear Static and Dynamic Analysis of Reinforced Concrete Frames 3:40
Filip C. Filippou, Associate Professor, Department of Civil
Engineering, University of California at Berkeley, Berkeley, California;
Ahmad Issa, Research Assistant, Department of Civil Engineering,
University of California at Berkeley, Berkeley, California

Cyclic Load Response of Structural Walls with Staggered Door Openings 4:05
James K. Wight, Professor, Department of Civil Engineering,
University of Michigan, Ann Arbor, Michigan; Aejaz Ali, Research
Assistant, Department of Civil Engineering, University of Michigan,
Ann Arbor, Michigan

Strength of Unbonded Partially Prestressed Concrete Members 4:30
T. L. Campbell, Professor, Department of Civil Engineering, Queen's
University, Kingston, Ontario, Canada; K. L. Chouinard, Structural
Design Engineer, Adjeleian Allen Rubelli Ltd., Ottawa, Ontario,
Canada
TUESDAY, October 31, 1989
2:00 PM – 5:00 PM
Room: Marriott Hall 6

SPREADSHEETS ON CONCRETE TECHNOLOGY AND DESIGN – PART II
Sponsored by Committee E705

Session Chairman: Bob Barnett
Bob Barnett, P.E.
Cropwell, Alabama

Introduction
Bob Barnett, Bob Barnett, P.E., Cropwell, Alabama

Design of Reinforced and Non-Reinforced Concrete Masonry Structures Using Spreadsheets
Bijan H. Ahmadi, Department of Civil and Architectural Engineering, University of Miami, Coral Gables, Florida; K.T. Lin, Beiswenger, Hock and Associates, N. Miami Beach, Florida; Nader Ghafoori, Assistant Professor, St. Martins College, Olympia, Washington

Calculation of Concrete Member Deflections by Spreadsheet
Tony Staeger, Structural Engineer, Hammel Green and Abrahamson, Inc., Minneapolis, Minnesota

Spreadsheet Approach for the Design of Prestressed Concrete Bridge Girders
Fernando Fagundo, Associate Professor, Department of Civil Engineering, University of Florida, Gainesville, Florida; David W. Carmizo, Graduate Student, Hollywood, Florida

Shear Design of Prestressed Concrete Beams
Ernesto Montiel, Department of Civil Engineering, Georgia Tech, Atlanta, Georgia; Lawrence Kahn, Professor, School of Engineering, Georgia Tech, Atlanta, Georgia

Panel Discussion
TECHNICAL SESSION

TUESDAY, October 31, 1989
2:00 PM - 5:00 PM
Room: Marriott Hall 5

CONCRETE POLYMER MATERIALS IN MARINE ENVIRONMENTS
Sponsored by Committee 548

Session Chairman: Larry C. Muszynski
Principal Engineer
Applied Research Associates
Tyndall Air Force Base
Florida

The Effect of Latex on the Chloride Ingress in Concrete 2:00
Harold Justnes, Research Engineer, Cement and Concrete Research
Institute, Trondheim, Norway; B. A. Oye, Cement and Concrete
Research Institute, Trondheim, Norway

Polymer Pile Encapsulation, Factors Influencing Performance 2:30
Richard K. Snow, Consultant, Gallatin, Texas

Durability Characteristics of Latex Modified Carbon Fiber 3:00
Reinforced Cement
Parviz Soroshian, Assistant Professor, Department of Civil and
Environmental Engineering, Michigan State University, East
Lansing, Michigan; Fadhel Aouadi, Research Assistant, Department
of Civil and Environmental Engineering, Michigan State University,
East Lansing, Michigan; Mohamad Nagi, Research Assistant,
Department of Civil and Environmental Engineering, Michigan State
University, East Lansing, Michigan

Development of High Quality Composite Pipes Using Polymer 3:30
Mortar and Expansive Concrete
Makoto Kawakami, Associate Professor, Department of Civil
Engineering, Akita University, Akita-Shi, Japan; Hiroshi Tokuda,
Department of Civil Engineering, Akita University, Akita-Shi, Japan;
Makoto Kagaya, Department of Civil Engineering, Akita University,
Akita-Shi, Japan; Reijiro Nasu, Teikoku Hume Pipe Company, Ltd.,
Tokyo, Japan

Sealing a Concrete Bulkhead Under Pressure 4:00
Floyd E. Dimmick, Chief Executive Officer, Thermal-Chem, Inc.,
Rolling Meadows, Illinois

THEME SESSION ★
TECHNICAL SESSION

TUESDAY, October 31, 1989
2:00 PM – 5:00 PM

STATE-OF-THE-INDUSTRY, CAST-IN-PLACE CONCRETE PIPE

Sponsored by Committee 346

Session Chairman: Curtiss W. Gilley
   President
   Tremont Equipment Company
   Dixon, California

Session Co-Chairman: Gilbert G. Lynch
   President
   KIP, Inc.
   Dixon, California

Introduction 2:00
Curtiss W. Gilley, President, Tremont Equipment Company, Dixon, California

Cast-in-Place Concrete Pipe: What Is It? 2:10
Curtiss W. Gilley, President, Tremont Equipment Company, Dixon, California

Structural Performance of Cast-in-Place Concrete Pipe 3:00
Lester H. Gabriel, Professor, Department of Civil Engineering, California State University, Sacramento, California

A Consultant Looks at Cast-in-Place Concrete Pipe 3:35
James E. Fry, Consulting Civil Engineer, Paul A. Moote and Associates, Inc., Santa Ana, California

Cast-in-Place Concrete Pipe: A Contractor’s Perspective 4:15
Gilbert G. Lynch, Consulting Civil Engineer, Paul A. Moote and Associates, Inc., Santa Ana, California

THEME SESSION
TECHNICAL SESSION

TUESDAY, October 31, 1989
7:30 PM – 10:00 PM

FORUM: SEALING COMPOUNDS FOR
CONCRETE SURFACES

Sponsored by Committees 123 and 515

Session Moderator: Robert L. Henry
Vice President
Maxim Engineers, Inc.
Fort Worth, Texas

Introduction 7:30
Robert L. Henry, Vice President, Maxim Engineers, Inc., Fort Worth, Texas

Panelists:

Manufacturers/Suppliers Point of View 7:45
Jim Lucas, ProSoCo, Inc., Kansas City, Kansas

Owner/Researcher Point of View 7:55
Glenn Smoak, Bureau of Reclamation, Denver, Colorado

Sealing Concrete for Protection – Engineering Consultant Point of View 8:05
Ray Schutz, Material Consultant, Wapun, Wisconsin

Laboratory Evaluation/Specs. Point of View 8:15
Tony Husbands, Waterways Experiment Station, Vicksburg, Mississippi

Manufacturer/Supplier/Trouble Shooter Point of View 8:25
Randall Lyons, Technical Services Director, Lincoln, Nebraska

Open Discussion 8:35
EDUCATIONAL SEMINAR

TUESDAY, October 31, 1989
7:30 PM – 10:00 PM

Room: Marriott Hall 5

FORUM: COMPUTER-AIDED DESIGN AND DRAFTING (CAD/D) SYSTEMS

Sponsored by Committee E705

Session Chairman: Jose M. Izquierdo
Partner
Izquierdo, Rueda and Associates
Rio Piedras, Puerto Rico

Computer-Aided Design and Drafting Software and Hardware 7:30
Robert P. Barnett, Structural Engineer, Cropwell, Alabama

Concrete Detailing Using Computer-Aided Design and Drafting 8:00
Jose M. Izquierdo, Partner, Izquierdo, Rueda and Associates, Rio Piedras, Puerto Rico

Use of Auto Computer-Aided Design for Structural Analysis and Design 8:30
Don Milks, Professor, Department of Civil Engineering, Ohio Northern University, Ada, Ohio
COMPUTER SOFTWARE DEMONSTRATION

WEDNESDAY, THURSDAY – November 1 and 2, 1989

Wednesday: 1:00 PM - 6:00 PM
Thursday: 8:00 AM - 6:00 PM
Room: Orlando/New York

COMPUTER SOFTWARE DEMONSTRATION
OF PROGRAMS MARKETED BY ACI

The marketing of computer programs by ACI is a service to those involved in concrete design and construction established by the ACI Board of Direction. Programs involving mix management, statistical analysis, shoring, and the structural design of reinforced, precast and prestressed concrete are currently marketed by ACI and will be demonstrated by the program developers.

You are cordially invited to take advantage of this unique opportunity to familiarize yourselves with programs specially conceived for use in concrete technology.

MATERIALS

<table>
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<tr>
<th>Developers</th>
<th>Mix Management Programs</th>
<th>Catalog#</th>
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<tr>
<td>Shilstone &amp; Associates</td>
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<tr>
<td>James (Jim) Shilstone, Sr.</td>
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<td>James (Jay) Shilstone, Jr.</td>
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Statistical Analysis of Strength Test Results

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CONSTRUCTION

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<td>Noel J. Gardner</td>
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<tr>
<td>Department of Civil Engineering University of Ottawa Ottawa, Ontario, Canada</td>
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<tr>
<td>Guzinta Software, Inc.</td>
<td>Anchor Bolts and</td>
<td>36.GUZ.1</td>
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<tr>
<td>Cary, North Carolina</td>
<td>Other Steel</td>
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<tr>
<td>William Steele</td>
<td>Embedments Design</td>
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COMPUTER SOFTWARE DEMONSTRATION

WEDNESDAY, THURSDAY - November 1 and 2, 1989

Wednesday: 1:00 PM - 6:00 PM
Thursday: 8:00 AM - 6:00 PM
Room: Orlando/New York

COMPUTER SOFTWARE DEMONSTRATION
OF PROGRAMS MARKETED BY ACI
(continued)

<table>
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<th>STRUCTURAL DESIGN Developers</th>
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<td>Paul G. Cass, Pittsburgh, Pennsylvania</td>
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<td>1.CA.1U</td>
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<td>Portland Cement Association Skokie, Illinois Vytenis P. Markevicious</td>
<td>ADOSS - Analysis and Design of Slab Systems</td>
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<td>MATS - Combined Footings and</td>
<td>40.PCV.2</td>
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<td>STMFR - Building Frame and Shear Wall Analysis</td>
<td>41.PCV.3</td>
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<tr>
<td>Zeiler-Pennock, Inc. Denver, Colorado Jack C. Zeiler President</td>
<td>Concrete Footings</td>
<td>10.ZP.6</td>
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<td>Reinforced Concrete Column</td>
<td>11.ZP.7</td>
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<td>Reinforced Concrete Beam</td>
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<td>Lateral Shear Wall Analysis and</td>
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<td>Zeiler-Pennock, Inc. Denver, Colorado Jack C. Zeiler President</td>
<td>Post-Tensioned Flat Plate</td>
<td>14.ZP.12</td>
</tr>
</tbody>
</table>

Literature describing the programs demonstrated will be available in the demonstration room, Orlando/New York. Orders may also be taken for programs.
RAP SESSION/CONTINENTAL BREAKFAST

WEDNESDAY, November 1, 1989
8:30 AM – 9:45 AM

Room: Marriott Hall 1, 2

RAP SESSION AND CONTINENTAL BREAKFAST
A complimentary continental breakfast will be served from 8:30 – 9:00 AM with the Rap Session starting at 9:00 AM. Complete the question card in your convention packet or present your question personally at the session.

WHAT DO YOU WANT TO KNOW ABOUT ACI?

Paul Zia
President

and

George F. Leyh
Executive Vice President

Invite YOU to ask them.
GENERAL SESSION

WEDNESDAY, November 1, 1989
10:00 AM – 12:00 NOON

Room: Marriott Hall 3, 4

GENERAL SESSION

Session Chairman:  David J. Akers
Pre-Mixed Concrete Company
San Diego, California

Welcome to San Diego
David J. Akers, Pre-Mixed Concrete Company, San Diego, California

Phil M. Ferguson Lecture

"Concrete - Challenge and Opportunity"
Professor Alan H. Mattock, Department of Civil Engineering, University of Washington, Seattle, Washington

Certificates of Appreciation for the 1989 Fall Convention

Introduction of International Visitors

Recognition of Chapter Officers Attending

Recognition of Past Presidents Attending

Keynote Address

"Tomorrow’s Engineers are Here Today"
Dr. Harold L. Hodgkinson is Senior Fellow and Director, Center for Demographic Policy Institute for Educational Leadership, Washington, D.C. He is a nationally-known speaker and analyst of educational issues. Holding eight honorary degrees, Dr. Hodgkinson has been editor of several journals, is the author of 12 books and numerous articles, and has directed eight major research projects on education and management.

Closing Remarks
TECHNICAL SESSION

WEDNESDAY, November 1, 1989
2:00 PM – 5:00 PM
Room: Torrey 2,3

ANCHORAGE TO CONCRETE
Sponsored by Committee 355

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

Introduction 2:05
Harry B. Lancelot, III, Director of Engineering, Richmond Screw Anchor Company, Fort Worth, Texas

Guidelines for Design of Anchorage to Concrete 2:20
Harry Wiewel, President, Techmar, Inc., Long Beach, California

Evaluation of Expansion Anchor Ultimate Tensile Capacity Prediction Equations 2:43

Comprehensive Testing of the Hilti Kwik-Bolt II Torque Controlled Expansion Anchor 3:06
Richard E. Wollmershauser, Manager, Testing Department, Hilti, Inc., Tulsa, Oklahoma

Load-Relaxation Tests on Sleeve and Load Caulking Expansion 3:29
George A. Seniw, Associate Research Engineer, Ontario Hydro, Toronto, Ontario, Canada

Behavior of Ductile Multiple-Anchor Connections to Concrete 3:52
Richard E. Klingner, Professor, Department of Civil Engineering, University of Texas at Austin, Austin, Texas; Ronald A. Cook, Assistant Professor, Department of Civil Engineering, University of Florida, Gainesville, Florida

Behavior of Fastenings in Cracked Concrete 4:15
Rolf Elgehausen, Prof.Dr.-Ing., Universität Stuttgart, Institut für Werkstoffe im Bauwesen, Stuttgart, West Germany; Werner Fuchs, Dipl.-Ing., Universität Stuttgart, Institut für Werkstoffe im Bauwesen, Stuttgart, West Germany

Embedment Design Examples Based on ACI 349 Appendix B 4:38
Richard Orr, Advisory Engineer, Westinghouse Electric Corporation, Pittsburgh, Pennsylvania
WEDNESDAY, November 1, 1989
2:00 PM – 5:00 PM
Room: Columbia 2, 3

HISTORY OF CONCRETE
Sponsored by Committee 120

Session Chairman: Raymond C. Heun
Executive Director
New York Concrete Construction Institute
New York, New York

History of Concrete in the Delaware Valley 2:00
Michael J. Paul, Consulting Structural Engineer, Wilmington, Delaware

Hearst Castle 2:25
Charles M. Dabney, Consultant, Charles Dabney Associates, Newport Beach, California

Historic American Concrete Bridges: Are We Ignoring Their Esthetics? 2:55
Abba Lichtenstein, Director of Engineering, Fairlawn, New Jersey

Concrete System: Frank Bunker Gilbreth and Concrete Construction, 1895-1910 3:25
Jane Morley, Department of History and Sociology of Science, University of Pennsylvania, Philadelphia, Pennsylvania

Conservators of Art and Architecture 4:00
Myrna Saxs, Principal, Conservators of Art and Architecture, Inc., Sherman Oaks, California

Irrigation Aqueduct at Brooks, Alberta 4:20
Robert Looy, Professor, Department of Civil Engineering, The University of Calgary, Calgary, Alberta, Canada; David Manz, Associate Professor, Department of Civil Engineering, The University of Calgary, Calgary, Alberta, Canada
TECHNICAL SESSION

WEDNESDAY, November 1, 1989
2:00 PM - 5:00 PM
Room: Manchester 1, 2

SCALE MODELS OF SPECIAL STRUCTURES
Sponsored by Committee 444

Session Chairman: Kirk A. Marchand
Senior Research Engineer
Department of Civil Engineering
and Energetic Systems
Southwest Research Institute
San Antonio, Texas

Session Co-Chairman: Bajanan M. Sabnis
Professor
Department of Civil Engineering
Howard University
Washington, D.C.

Why Scale Models and What are Special Structures? 2:00
Theodore Krauthammer, Associate Professor, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota

Scale Model Studies of Hinge Formation in Bridge Columns Due to Seismic Loading 2:10
K. Y. Lim, Graduate Student, Department of Civil Engineering, Washington State University, Pullman, Washington; D. L. McLean, Assistant Professor, Department of Civil Engineering, Washington State University, Pullman, Washington

Modeling the Structural Effects of Alkali-Aggregate Reaction 2:35
L. A. Clark, Senior Lecturer in Civil Engineering, University of Birmingham, Birmingham, England

Punching Shear of Thick Concrete Plates 3:00
Long T. Phan, National Institute of Science and Technology, Washington, D.C.; H. S. Lew, National Institute of Science and Technology, Washington, D.C.; D. L. McLean, Assistant Professor, Department of Civil Engineering, Washington State University, Pullman, Washington

Model Testing of Dynamic Soil-Structure Interaction 3:40
H. L. Chen, Department of Civil Engineering, Northwestern University, Evanston, Illinois; S. P. Shah, Department of Civil Engineering, Northwestern University, Evanston, Illinois; L. M. Keer, Department of Civil Engineering, Northwestern University, Evanston, Illinois

Modeling Earthquake Response of Concrete Masonry Building Structures 4:05
D. P. Abrams, Associate Professor, Department of Civil Engineering, University of Illinois, Urbana, Illinois; T. J. Paulson, Research Engineer, Department of Civil Engineering, University of Illinois, Urbana, Illinois

Seismic Response of a 1:6 R/C Scaled Model Structure with Flexible Floor Diaphragms 4:30
Andrei M. Reinhold, Associate Professor, Department of Civil Engineering, State University of New York, Buffalo, New York; Nader Panahshahi, Research Associate, Department of Civil Engineering, State University of New York, Buffalo, New York; Le-Wu Lu, Professor, Department of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania; Ti Huang, Professor, Department of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania; Kai Yu, Research Assistant, Department of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania
TECHNICAL SESSION

WEDNESDAY, November 1, 1989
2:00 PM – 5:00 PM

OFFSHORE AND MARINE CONCRETE
Sponsored by Committee 357

Session Chairman: William J. Cichanski
Manager, West Coast Operations
Seattle Branch Office
Construction Technology Laboratories, Inc.
Federal Way, Washington

Continuing Growth in Marine Concrete Technology
William J. Cichanski, Manager, West Coast Operations, Seattle
Branch Office, Construction Technology Laboratories, Inc., Federal
Way, Washington

The Selection of Load and Strength Reduction Factors for
Concrete Offshore Structures
Karl H. Runge, Research Associate, Exxon Production Research
Company, Houston, Texas

Offshore Structure Serviceability Criteria in ACI 357R
George F. Davenport, Research Associate, Exxon Production
Research Company, Houston, Texas; Anthony E. Fiorato, Vice
President, Portland Cement Association, Skokie, Illinois

Investigation and Evaluation of Concrete Liberty Ships
Trevor J. Peach, Principal, Taylor Peach and Associates Ltd.,
Vancouver, British Columbia, Canada

Future ACI Manual for Design of Concrete Marine Structures
Valery M. Buslov, Associate, Han-Padron Associates, New York,
New York

Recent Piers and Wharves Built in Southern California
Jal N. Birdy, Project Manager, Moffatt and Nichol Engineers, Long
Beach, California

THEME SESSION
TECHNICAL SESSION

WEDNESDAY, November 1, 1989
2:00 PM – 5:30 PM
Room: San Diego Ballroom A

PAUL KLIJGER INTERNATIONAL
SYMPOSIUM ON PERFORMANCE OF
CONCRETE – PART I

Sponsored by Committees 201 and 222

Session Chairman: Steven Gehrler
Principal Evaluation Engineer
Construction Technology Laboratories, Inc.
Skokie, Illinois

Introduction
Brief Review of Career and Accomplishments of Paul Klijger
2:00
David Stark, Project Manager, Construction Technology Laboratories, Inc., Skokie, Illinois

How to Make Concrete that Will Be Immune to the Effects of
Freezing and Thawing
2:10
Bryant Mather, Chief, Structures Laboratory, Waterways Experiment Station, Vicksburg, Mississippi

Durability of High-Strength Concrete
2:40
P. Kumar Mehta, Professor, Department of Civil Engineering, University of California at Berkeley, Berkeley, California

Deicer Salt Scaling Resistance of High Performance Concrete
3:10
Michel Pigeon, Professor, Department of Civil Engineering, Laval University, Ste-Foy, Quebec, Canada; Richard Gagne, Graduate Student, Laval University, Ste-Foy, Quebec, Canada; Pierre-Claude Aitcin, Professor, Department of Civil Engineering, Sherbrooke University, Sherbrooke, Quebec, Canada

Suitability of the Measurement Techniques of Oxygen Permeability in Order to Predict Corrosion Rates of Concrete Rebars
3:40
C. Alonso, Researcher, Institute E. Torroja of Construction and Cement, Madrid, Spain; C. Andrade, Research Professor, Institute E. Torroja of Construction and Cement, Madrid, Spain; I. Rz-Maribona, Research Student, Institute E. Torroja of Construction and Cement, Madrid, Spain; M. Garcia, Research Student, Institute E. Torroja of Construction and Cement, Madrid, Spain; J.A. Gonzalez, National Center of Metallurgical Research, Madrid, Spain

Freeze-Thaw Durability of Concrete Coated with Linseed Oil
4:10
Tel Rezansoff, Professor, Department of Civil Engineering, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; Daniel Stott, Materials Technician, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Effects of “Second Generation” High Range Water-Reducers on Durability and Other Properties of Hardened Concretes
4:40
THURSDAY, November 2, 1989
8:30 AM – 12:00 NOON
Room: Marriott Hall 4

PAUL KLEGER INTERNATIONAL SYMPOSIUM ON PERFORMANCE OF CONCRETE – PART II

Sponsored by Committees 201 and 222
Session Chairman: Bernard Erlin
President
Testwell Craig Erlin Associates
Ossining, New York

Long Service Life of Concrete
Lewis H. Tuthill, Concrete Engineering Consultant, Sacramento, California
8:30

Strategy and Evaluation of Materials and Methods for Rehabilitation of Concrete Shells for Two Natural Draft Cooling Towers
9:00

Durability of a Precast Prestressed Concrete Conveyor Bridge Structure at a Salt Mine After 17 Years of Service
Randall W. Poston, Schupack-Suarez Engineers, South Norwalk, Connecticut; Morris Schupack, President, Schupack-Suarez Engineers, South Norwalk, Connecticut
9:30

Rehabilitation of Great Lakes Steel's Number 1 Ore Dock
Charles J. Hookham, Senior Engineer, Multiple Dynamics Corporation, Southfield, Michigan
10:00

Deterioration and Rehabilitation of Elevated Roadway Bridge at Baltimore-Washington International Airport
Alexander M. Vaysburd, Structural/Material Research Engineer, Grainer Engineering, Inc., Timonium, Maryland
10:30

Monitoring, Management, and Maintenance of Concrete Structures with Limited Accessibility
Jens Holm, Vice President, G. M. Idorn Consult A/S, Birkerod, Denmark
11:00

NOTE: Part II of the Paul Kliger International Symposium on Performance of Concrete will be presented on Thursday, November 2, 1989 from 8:30 AM to 12:00 Noon in Marriott Hall 4. Part III of the Paul Kliger International Symposium on Performance of Concrete will be presented on Thursday, November 2, 1989 from 2:00 PM to 5:30 PM in Marriott Hall 4. Part IV of the Paul Kliger Symposium on Performance of Concrete will be presented on Friday, November 3, 1989 from 9:00 AM to 12:00 Noon in Marriott Hall 2.
THURSDAY, November 2, 1989
9:00 AM – 12:00 NOON

Room: Marriott Hall 1

EFFECT OF CONCRETE CONSTITUENTS
AND ENVIRONMENT ON CREEP AND
SHRINKAGE – PART I

Sponsored by Committee 209

Session Chairman:  K. Nam Shiu
  Senior Engineer
  Structural Development
  Construction Technology Laboratories, Inc.
  Skokie, Illinois

Session Co-Chairman: Menashi D. Cohen
  Associate Professor
  School of Civil Engineering
  Purdue University
  West Lafayette, Indiana

Introduction
  9:00
  K. Nam Shiu, Senior Engineer, Structural Development,
  Construction Technology Laboratories, Inc., Skokie, Illinois

Environmental Effects on the Shrinkage of Continuously
Reinforced Concrete Pavement Mixtures
  9:05
  Mikael P. J. Olsen, Consultant, Jexen Engineering Services, Bryan,
  Texas

The Effect of Thermal Stress on Concrete Creep:
Red River Lock and Dam 3
  9:40
  Stacey K. Hirata, Major/Assistant Professor, U.S. Military
  Academy, West Point, New York; Donald M. Smith, Civil Engineer,
  U.S. Army Waterways Experiment Station, Vicksburg, Mississippi;
  Michael I. Hammons, Research Civil Engineer, U.S. Army
  Waterways Experiment Station, Vicksburg, Mississippi

Creep of High-Strength Concrete Containing Fly Ash
and Silica Fume
  10:15
  H. Marzouk, Associate Professor, Department of Civil Engineering,
  Memorial University of Newfoundland, St. John's, Newfoundland,
  Canada

Inelastic Deformation of Mass Concrete Due to Heat of
Hydration of the Cement
  10:50
  Will Hansen, Associate Professor, University of Michigan, Ann
  Arbor, Michigan; Pri Tjiptobroto, Graduate Research Assistant,
  University of Michigan, Ann Arbor, Michigan

NOTE: Part II of Effect of Concrete Constituents and
Environment on Creep and Shrinkage will be presented on
Thursday, November 2, 1989 from 2:00 PM to 5:00 PM in
Marriott Hall 1.
THURSDAY, November 2, 1989
9:00 AM - 12:00 NOON

TECHNICAL SESSION

ROOM: Torrey 2,3

DESIGN OF BEAM TO COLUMN JOINTS -
PART I: DESIGN OF JOINTS IN SEISMIC
ZONES - COOPERATIVE U.S./JAPAN/NEW
ZEALAND/CHINA PROJECT

Sponsored by Committee 352

Session Chairman: James O. Jirsa
Ferguson Structural Engineering Laboratory
University of Texas at Austin
Austin, Texas

Session Co-Chairman: James K. Wight
Professor
Department of Civil Engineering
University of Michigan
Ann Arbor, Michigan

Background and Overview of the Quadrilateral Project
9:05
James O. Jirsa, Ferguson Structural Engineering Laboratory,
University of Texas at Austin, Austin, Texas

Research Leading to Development of Design Criteria for
R/C Beam-Column Joints
9:30
Hiroyuki Aoyama, Professor, Department of Architecture, Faculty of
Engineering, University of Tokyo, Tokyo, Japan; Kazuhiro
Kitayama, Research Associate, Department of Architecture, Faculty
of Engineering, Utsunomiya University, Utsunomiya-shi, Japan;
Shunsuke Otani, Associate Professor, Department of Architecture,
Faculty of Engineering, University of Tokyo, Tokyo, Japan

New Design Guidelines for Earthquake Resistant R/C Buildings
Based on Ultimate Strength Concepts — Emphasis on
Beam-Column Joints
10:00
Shunsuke Otani, Associate Professor, Department of Architecture,
Faculty of Engineering, University of Tokyo, Tokyo, Japan

Recent Developments in New Zealand Regarding Joint Design
10:30
Robert Park, Professor and Head, Department of Civil Engineering,
University of Canterbury, Christchurch, New Zealand

Joint Design for Structures in Japan Using Precast Concrete
11:00
Y. Kurose, Engineer, Design Division, Shimizu Corporation, Tokyo,
Japan

Role of Slab in Response and Design of Joints
11:30
Catherine Waltgram French, Assistant Professor, Department of
Civil and Mining Engineering, University of Minnesota, Min-
neapolis, Minnesota; Jack P. Moehle, Associate Professor, Depart-
ment of Civil Engineering, University of California at Berkeley,
Berkeley, California

NOTE: Part II of this session will be presented on Thurs-
day, November 2 from 2:00 PM to 5:00 PM in Torrey 2,3.
THURSDAY, November 2, 1989
9:00 AM – 12:00 NOON

THIN-SECTION FIBER REINFORCED
CONCRETE AND FERROCEMENT
PRODUCTS—MATERIAL PROPERTIES AND
APPLICATIONS—PART I

Sponsored by Committees 544 and 549

Session Chairman: James I. Daniel
Group Leader
Construction Systems Laboratory
USG Corporation
Libertyville, Illinois

Session Co-Chairman: Gordon B. Batson
Professor
Department of Civil Engineering
Clarkson College of Technology
Potsdam, New York

Opening Remarks 9:00
James I. Daniel, Group Leader, Construction Systems Laboratory,
USG Corporation, Libertyville, Illinois

Plastic Shrinkage and Permeability in Polypropylene Fiber
Reinforced Concrete 9:05
M. A. Sanjuan, Chemical Engineer, Institute of Construction and
Cement "Eduardo Torroja" of CSIC, Madrid, Spain; B. Bacile,
Industrial Engineer, Institute of Construction and Cement "Eduardo
Torroja" of CSIC, Madrid, Spain; A. Moragues, Chemical Engineer,
Institute of Construction and Cement "Eduardo Torroja" of CSIC,
Madrid, Spain; C. Andrade, Industrial Engineer, Institute of
Construction and Cement "Eduardo Torroja" of CSIC, Madrid,
Spain

Impact of Thin Sheet FRC 9:30
Sidney Mindess, Professor of Civil Engineering, The University of
British Columbia, Vancouver, British Columbia, Canada; Arnon
Bentur, Associate Professor of Civil Engineering, Technion—Israel
Institute of Technology, Haifa, Israel; Cheng Yan, Student, The
University of British Columbia, Vancouver, British Columbia, Canada

Restrained Shrinkage Cracking of Concrete and Fiber
Reinforced Concrete 10:00
Miroslaw Grzybowski, Professor of Structural Engineering, Royal
Institute of Technology, Stockholm, Sweden; S. P. Shah, Professor
of Civil Engineering, Northwestern University, Evanston, Illinois

Glass Fiber Reinforced Concrete in Mining Applications 10:30
I.R.K. Greig, Manager CemFIL Support Technology, Pilkingtong
Group Research, Lancashire, England

The Development of Lightweight "60 to 100 pcf" Hydraulic Cement
Thin Section Reinforced Concrete Sheet Metal 11:00
M. Schupack, President, Schupack-Suarez Engineers, Inc., South
Norwalk, Connecticut
THURSDAY, November 2, 1989
9:00 AM – 12:00 NOON

THIN-SECTION FIBER REINFORCED CONCRETE AND FERROCEMENT PRODUCTS – MATERIAL PROPERTIES AND APPLICATIONS – PART I (continued)

Sponsored by Committees 544 and 549

Effect of Mesh Geometry on Flexural and Tensile Behavior of Ferrocement Thin Plates

11:30

R.N. Swamy, Professor of Mechanical Engineering, The University of Sheffield, Sheffield, England; Y.B.I. Shaheen, The University of Sheffield, Sheffield, England

NOTE: Part II of Thin-Section Fiber Reinforced Concrete and Ferrocement Products – Material Properties and Applications will be presented on Thursday, November 2, 1989 from 2:00 PM to 5:00 PM in Marriott Hall 3.
NEW DEVELOPMENTS IN MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE—PART I

Sponsored by Committee 304

Session Chairman: Robert A. Kelsey
Sales Engineer
Northwest Division
Ideal Basic Industries
Seattle, Washington

Session Co-Chairman: Paul R. Stodola
Manager, Civil Engineering Laboratory
American Electric Power Service Corporation
Columbus, Ohio

Introduction 9:00

Laboratory and Field Experience in Use of Premixed Paste in Concrete and Mortar 9:10
Gary R. Mass, Director of Concrete Engineering, Concrete Technology Corporation, Santa Barbara, California

Conveying Concrete for Melvin Price Locks and Dam (Phase II) 9:45
Jim Cope, President, Morgan Manufacturing Company, Yankton, South Dakota

Transporting of Ready-Mix Concrete Over 100 Miles from Ready-Mix Concrete Plant 10:20
Frank A. Kozeliski, Materials Engineer, Gallup Sand and Gravel Company, Gallup, New Mexico

Development of Pre-Cooling Method Using Frozen Sand 10:55
Morio Kurita, Research Engineer, Institute of Technology, Tokyo, Japan; Sadao Goto, Manager, Plant Construction Department, Tokyo Gas Company, Ltd., Tokyo, Japan; Koji Minegishi, Senior Engineer, Plant Construction Department, Tokyo Gas Company, Ltd., Tokyo, Japan; Takashi Kuwahara, Senior Research Engineer, Institute of Technology, Shimizu Corporation, Tokyo, Japan

NOTE: Part II of New Developments In Measuring, Mixing, Transporting and Placing Concrete will be presented on Thursday, November 2, 1989 from 2:00 PM to 5:00 PM in Marriott Hall 6.
THURSDAY, November 2, 1989
2:00 PM – 5:00 PM

EFFECT OF CONCRETE CONSTITUENTS
AND ENVIRONMENT ON CREEP AND
SHRINKAGE – PART II

Sponsored by Committee 209

Session Chairman: Marwan A. Daye
Senior Civil Staff Specialist
Bechtel Power Corporation
Gaithersburg, Maryland

Session Co-Chairman: Will Hansen
Associate Professor
Department of Civil Engineering
University of Michigan
Ann Arbor, Michigan

Introduction 2:00
Marwan A. Daye, Senior Civil Staff Specialist, Bechtel Power
Corporation, Gaithersburg, Maryland

Cracking Damage and Creep in a Drying Box Girder
Bridge Segment 2:05
Zdeněk P. Bažant, Professor, Northwestern University, Evanston,
Illinois; V. Kristek, Visiting Scholar at Northwestern University,
Evanston, Illinois, Professor, Czechoslovakia Tech. University at
Prague, Prague, Czechoslovakia

Effect of Paste Microstructure on the Drying Shrinkage
of Portland Cement Paste 2:40
J. Francis Young, Professor, University of Illinois, Urbana, Illinois;
C. L. Hwang, Professor, National Taiwan Institute of Technology,
Taipei, Taiwan, Republic of China

Stress Induced Shrinkage 3:15
Folker H. Wittmann, Director, Swiss Federal Institute of Technology,
Zurich, Switzerland

New Prediction Models for Creep and Shrinkage of Concrete 3:50
H. S. Muller, Director, Federal Institute of Materials and Research
(BAM), Berlin, West Germany; H. K. Hilsdorf, Professor and
Director, University of Karlsruhe, Karlsruhe, West Germany

Mathematical Modeling of Creep and Shrinkage in the Time
Dependent Analysis of Concrete Structures 4:15
Mark Ketchum, T. Y. Lin International, San Francisco, California;
Alex C. Scordelis, Professor, University of California at Berkeley,
Berkeley, California

NOTE: Part III of Effect of Concrete Constituents and
Environment on Creep and Shrinkage will be presented on
Friday, November 3, 1989 from 9:00 AM to 12:00 NOON in
Columbia 2, 3.
TECHNICAL SESSION

THURSDAY, November 2, 1989
2:00 PM – 5:00 PM
Room: Torrey 2,3

DESIGN OF BEAM TO COLUMN JOINTS - PART II
Sponsored by Committee 352

Session Chairman: Ahmad J. Durrani
Associate Professor
Department of Civil Engineering
Rice University
Houston, Texas

The Role of Slab at Beam to Column Joints
Thomas Paulay, Professor Emeritus, Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand

The Effect of Axial Column Load on the Behavior of Reinforced Concrete Beam to Column Joints Under Earthquake-Type Loading
Shiro Morita, Professor, Department of Architecture, Kyoto University, Kyoto, Japan; Shigeru Fujii, Research Associate, Department of Architecture, Kyoto University, Kyoto, Japan

The Impact of Constructibility of Concrete Ductile Frame Joints on Design Criterion Development and Research Need
Barrett Bunc, Structural Engineer, Robert Englekirk Consulting Engineers, Inc., Los Angeles, California; Robert E. Englekirk, President, Robert Englekirk Consulting Engineers, Inc., Los Angeles, California

Inelastic Behavior of Monolithic High-Strength Concrete Connections
M. R. Ehsani, Associate Professor, Department of Civil Engineering, University of Arizona, Tucson, Arizona; F. Alameddine, Graduate Student, Department of Civil Engineering, University of Arizona, Tucson, Arizona

Seismic Beam-Column Connections in Lightly Reinforced Concrete Frame Structures
Stephen D. Pessiki, Graduate Research Assistant, Department of Civil Engineering, Cornell University, Ithaca, New York; Richard M. White, Professor, Department of Civil Engineering, Cornell University, Ithaca, New York; Peter Gergely, Professor, Department of Civil Engineering, Cornell University, Ithaca, New York

Evaluation of Joint Shear Provisions for Design of Interior Connections Constructed with High-Strength Materials
Michael E. Kregel, Assistant Professor, Department of Civil Engineering, University of Texas at Austin, Austin, Texas; Gilson Guimarães, Assistant Professor, Department of Civil Engineering, Universidade Federal De Goias, Brazil; James O. Jirsa, Janet S. Cockrell Centennial Chair in Engineering, Department of Civil Engineering, University of Texas at Austin, Austin, Texas

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NEW DEVELOPMENTS IN MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE - PART II

Sponsored by Committee 304

Session Chairman: Robert A. Kelsey
Sales Engineer
Northwest Division
Ideal Basic Industries
Seattle, Washington

Session Co-Chairman: Paul R. Stodola
Manager, Civil Engineering Laboratory
American Electric Power Service Corporation
Columbus, Ohio

Concrete Mixture Production Controls for the Future 2:10
James M. Shilstone, Jr., Vice President, Shilstone Software Company, Dallas, Texas; James M. Shilstone, Sr., President, Shilstone and Associates, Dallas, Texas

Innovative Placement Methods of Specialized Concrete 2:45
Kenneth Saucler, Chief, Concrete Technology Division, U.S. Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi

Performance of Latex Modified and High Density Overlays 3:20
John B. Caldwell, Director, Federal Aid Assurance, New York City Department of Transportation, New York, New York; Paul J. St. John, Civil Engineer I, Materials, New York City Department of Transportation, Albany, New York

Mix Designs for and Concreting of New York City Water Pollution Control Plants 3:55
Paul Zoltanetzky, Jr., Chief, Plant Construction, City of New York, New York, New York; Clifford Gordon, COAC, New York, New York

Placing a Concrete Canal Lining Underwater 4:30
William F. Kepler, Civil Engineer, U.S. Bureau of Reclamation, Denver, Colorado
TECHNICAL SESSION

THURSDAY, November 2, 1989
2:00 PM–5:00 PM
Room: Marriott Hall 3

THIN-SECTION FIBER REINFORCED
CONCRETE AND FERROCEMENT
PRODUCTS—MATERIAL PROPERTIES AND
APPLICATIONS—PART II

Sponsored by Committees 554 and 549

Session Chairman: Surendra P. Shah
Professor of Civil Engineering
Northwestern University
Evanston, Illinois

Session Co-Chairman: Gordon B. Batson
Professor of Civil Engineering
Clarkson College of Technology
Potsdam, New York

Opening Remarks 2:00
Surendra P. Shah, Professor of Civil Engineering, Northwestern University, Evanston, Illinois

Investigations on Thin Precast Ferrocement Planks Connected Together by Steel Bolts 2:05
T. S. Krishnamoorthy, Scientist, Structural Engineering Research Centre, CSIR Campus, Madras, India; V. S. Parameswaran, Head, Concrete Composites Laboratory, SERC, CSIR Campus, Madras, India; M. Neelamegam, Scientist, SERC, CSIR Campus, Madras, India; K. Balasubramanian, Scientist, SERC, CSIR Campus, Madras, India

Oriented Polyethylene Fibrous Pulp Reinforced Cement Composites 2:30
David M. Gale, E. I. Du Pont de Nemours and Company, Inc., Wilmington, Delaware; Ashok H. Shah, E. I. Du Pont de Nemours and Company, Inc., Richmond, Virginia; P. N. Balaguru, Professor of Civil Engineering, Rutgers University, Piscataway, New Jersey

Strength Properties of Steel Fiber Reinforced Concrete in Marine Environment 3:00
N. C. Kothari, Reader in Materials Science and Engineering, James Cook University of North Queensland, Townsville, Australia

Secondary Stresses in Glass Fiber Reinforced Concrete (GFRC) Thin Sections 3:30
C. O. D. Arrand, Construction Materials Engineer, Vulcan Materials Company, Birmingham, Alabama

Structural Behavior of Thin SFRC and Ferro-Fibro Overlays 4:00
R. M. Vasan, Reader in Civil Engineering, University of Roorkee, Roorkee, India; S. K. Kaushik, Professor of Civil Engineering, University of Roorkee, Roorkee, India; P. N. Godbole, Professor of Civil Engineering, University of Roorkee, Roorkee, India; D. C. Goel, Engineer, C.P.W.D., New Delhi, India

Development of Cement-Based Materials with Cellulose Fibers 4:30
Parviz Sorouhian, Assistant Professor of Civil Engineering, Michigan State University, East Lansing, Michigan; Shashidhara Marikunte, Research Assistant, Michigan State University, East Lansing, Michigan
THURSDAY, November 2, 1989
2:00 PM – 5:30 PM  Room: Marriott Hall 4

PAUL KLEGER INTERNATIONAL SYMPOSIUM ON PERFORMANCE OF CONCRETE – PART III
Sponsored by Committees 201 and 222

Session Chairman: David Stark
Project Manager
Construction Technology Laboratories, Inc.
Skokie, Illinois

The Freeze-Thaw Environment: What is Severe?  2:00
Nico M. Vanderhorst, Graduate Research Assistant, University of Washington, Seattle, Washington; Donald J. Janssen, Assistant Professor, University of Washington, Seattle, Washington

Field Exposure of Concrete to Severe Natural Weathering  2:30
Joseph F. Lamond, Engineering Director, Pyramen/Lone Star Industries, Springfield, Virginia; M. K. Lee, Civil Engineer, U.S. Army Corps of Engineers, Washington, D.C.

Freeze-Thaw Durability and Deicer Salt Scaling Resistance of Roller Compacted Concrete Pavement  3:00
Michel Pigeon, Professor, Department of Civil Engineering, Laval University, Ste-Foy, Quebec, Canada; Jacques Marchand, Graduate Student, Laval University, Ste-Foy, Quebec, Canada; Jean Boisvert, Graduate Student, Laval University, Ste-Foy, Quebec, Canada; Henri Isabelle, Director, Cement Division, Canada-Cement Lafarge, Montreal, Quebec, Canada

An Overview of a New Field and Laboratory Study of the Durability of Reinforced and Post-Tensioned Concrete in the Marine Environment  3:30
Edward F. O’Neill, Civil Engineering Consultant, Vicksburg, Mississippi; D. V. Reddy, Professor of Ocean Engineering, Florida Atlantic University, Boca Raton, Florida; T. W. Bremner, Professor, Department of Civil Engineering, University of New Brunswick, Fredericton, New Brunswick, Canada; W. H. Hartt, Professor of Ocean Engineering, Florida Atlantic University, Boca Raton, Florida; M. Arockiasamy, Professor of Ocean Engineering, Florida Atlantic University, Boca Raton, Florida

Performance of Concrete in Aggressive Environments  4:00

Carbonation in Building Structures in Canada  4:30
John A. Bickley, Consulting Engineer, John A. Bickley Associates, Ltd., Brampton, Ontario, Canada

Involvement of Bacteria in Concrete Corrosion  5:00
Charles F. Kulpa, Jr., Associate Professor, Department of Microbiology, University of Notre Dame, Notre Dame, Indiana

NOTE: Part IV of the Symposium will be presented on Friday, November 3, 1989 from 9:00 AM to 12:00 NOON in Marriott Hall 3.
FRIDAY, November 3, 1989
9:00 AM - 12:00 NOON
Room: Orlando/New York

FRACUTRE OF CONCRETE UNDER SPECIAL ENVIRONMENTS AND LOADINGS

Sponsored by Committee 446

Session Chairman: Wimal Suaris
Associate Professor
Department of Civil and Architectural Engineering
University of Miami
Coral Gables, Florida

Session Co-Chairman: Jeremy Isenberg
Principal
Weidlinger Associates
Los Altos, California

Influence of Loading Rate and Temperature on Fracture of Concrete 9:00
Zdeněk P. Bažant, Professor, Center for Advanced Cement-Based Materials, Northwestern University, Evanston, Illinois; Ravindra Gettu, Center for Advanced Cement-Based Materials, Northwestern University, Evanston, Illinois

Strain-Rate Sensitivity of Concrete Mechanical Properties 9:30
Neil Hawkins, Professor, Department of Civil Engineering, University of Washington, Seattle, Washington; Jung-Heun Yon, Pre-Doctoral Research Associate, Department of Civil Engineering, University of Washington, Seattle, Washington; Albert Kobayashi, Professor, Department of Civil Engineering, University of Washington, Seattle, Washington

Mixed Mode Fracture of Concrete Subjected to Impact Loading 10:00
Surendra P. Shah, Professor and Director, Center for Advanced Cement-Based Materials, Northwestern University, Evanston, Illinois; Reji John, Associate Research Engineer, Structural Integrity Division, University of Dayton Research Institute, Dayton, Ohio

Fatigue of Submerged Concrete 10:30
Avi A. Mor, Mor Associates, Los Angeles, California; Ben C. Gerwick, Professor, Department of Civil Engineering, University of California at Berkeley, Berkeley, California; Weston T. Hester, Associate Professor, Department of Civil Engineering, University of California at Berkeley, Berkeley, California

Studies of Fiber-Matrix Bond as Affected by Stress-Rate and Temperature 11:00
Nemkumar Banthia, Assistant Research Professor, Department of Civil Engineering, Laval University, Ste-Foy, Quebec, Canada
EFFECT OF CONCRETE CONSTITUENTS 
AND ENVIRONMENT ON CREEP AND 
SHRINKAGE - PART III

Sponsored by Committee 209

Session Chairman: Hesham Marzouk
Associate Professor
Department of Civil Engineering
Memorial University of Newfoundland
St. John's, Newfoundland, Canada

Session Co-Chairman: Mikael P. J. Olsen
Principal
Jexen Engineering Services
Bryan, Texas

Introduction
Hesham Marzouk, Associate Professor, Department of Civil Engineering, Memorial University of Newfoundland, St. John's, Newfoundland, Canada

Creep and Shrinkage of Concrete as Affected by Admixtures and Cement Replacement Materials

Drying Shrinkage Characteristics of Carbon Fiber Reinforced Cement Composites
Parviz Soroushian, Assistant Professor, Department of Civil Engineering, Michigan State University, East Lansing, Michigan; Mohamad Magi, Research Assistant, Department of Civil Engineering, Michigan State University, East Lansing, Michigan

Effect of Curing on Creep and Shrinkage of Concrete Containing Fly Ash
Ramon L. Carrasquillo, Associate Professor, Department of Civil Engineering, University of Texas at Austin, Austin, Texas; Mohand L. Sennour, Student, University of Texas at Austin, Austin, Texas; Peggy M. Carrasquillo, Research Engineer, Department of Civil Engineering, University of Texas at Austin, Austin, Texas

State-of-the-Art Study on Drying Shrinkage and Creep of Concretes Containing Blast-Furnace Slag
Chern Jenn-Chuan, Associate Professor, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan

Shrinkage of Statically Compacted Cement-Phosphogypsum Mixtures
C. X. Ling, Department of Civil Engineering, University of Miami, Coral Gables, Florida; K. T. Lin, Structural Engineer, Department of Civil Engineering, University of Miami, Coral Gables, Florida; W. F. Chang, Professor and Director, Phosphate Research Institute, Coral Gables, Florida
TECHNICAL SESSION

FRIDAY, November 3, 1989
9:00 AM - 12:00 NOON
Room: Marriott Hall 3

PAUL KLIEGER INTERNATIONAL SYMPOSIUM ON PERFORMANCE OF CONCRETE - PART IV

Sponsored by Committees 201 and 222

Session Chairman: David Whiting
Principal Research Engineer
Construction Technology Laboratories, Inc.
Skokie, Illinois

Micro Air-Voids in Concrete: A Study of the Influence of Superplasticizers by Means of Scanning Electron Microscopy 9:00
Michel Pigeon, Professor, Department of Civil Engineering, Laval University, Ste-Foy, Quebec, Canada; René M. Faure, Ecole Nationale Des Travaux Publics De L'Etat, Vaulx-en-Velin, France; Richard Plew, Laval University, Ste-Foy, Quebec, Canada; Thierry Sedran, Laval University, Ste-Foy, Quebec, Canada

Materials and Techniques for Repairing Marine Structures Damaged by Impact, Cavitation, and other Aggressive Attack 9:30
Weston T. Hester, Associate Professor, Department of Civil Engineering, University of California at Berkeley, Berkeley, California

Corrosion of Reinforcing Steel in Concrete Exposed to Marine and Freshwater Environments 10:00
Robert Heidersbach, Professor and Head, Department of Metallurgical and Materials Engineering, California Polytechnic State University, San Luis Obispo, California

Evaluation of Concrete Masonry Wall in a Highly Corrosive Environment 10:30
David J. Akers, Pre-Mixed Concrete Company, San Diego, California

Performance of Concrete in a High Chloride Sulfate Environment 11:00
Mohammed Maslehuddin, Senior Engineer, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia; Huseyin Saricimen, Research Engineer, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia; Abdulaziz Ibrahim Al-Mana, Manager, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia; Mohammed Shamim, Engineer, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
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ACI
FUTURE
CONVENTIONS

1990 Spring Convention
March 18-23
Royal York Hotel
Toronto, Ontario, Canada
Convention Theme:
Concrete Durability

1990 Fall Convention
November 11-16
Wyndham Franklin Plaza Hotel
and
Four Seasons Hotel
Philadelphia, Pennsylvania
Convention Theme:
Structural Design

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Thank you for attending
the ACI 1989 Fall Convention.
See you in Toronto!