Convention Theme:
Concrete Constructibility

AMERICAN CONCRETE INSTITUTE
1989
ANNUAL CONVENTION
FEBRUARY 19 - 24
ATLANTA, GEORGIA
AMERICAN CONCRETE INSTITUTE

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Cleveland, Ohio

Medusa Cement Company
Cleveland, Ohio

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Honolulu, Hawaii

Portland Cement Association
Skokie, Illinois

Post-Tensioning Institute
Phoenix, Arizona
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February 19-24, 1989
The Atlanta Hilton and Towers
Atlanta, Georgia

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Concrete Constructibility

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February 1989

Dear ACI Convention Delegates:

Hi there, y'all!

Since these few words are the sum total of my knowledge of the language of the Old South, I'll have to resort to my native Yankee dialect to welcome all of you to Atlanta, a city of grits and greens, plantations and mint juleps, tall concrete buildings, and southern hospitality.

For those of us in the concrete industry, the city will literally be under "the big top" but with only two center rings, not three. And you'll have to be a circus trapeze artist to take in everything during the ACI convention and the World of Concrete trade show and exhibition, but give it a try. It will be worth it! This program provides the details about the ACI convention with its week-long series of important technical sessions and committee meetings. A visit to the World of Concrete will require only a jump onto a shuttle bus and a quick ride to the World Congress Center.

Atlanta promises to be another memorable convention for ACI and its members. If I or other ACI officers can be of help, don't hesitate to ask. If you can't find me in the headquarters hotel, go outside and look up — I may be swinging on a rope toward the World of Concrete.

Enjoy!

W. Burr Bennett, Jr.
President
American Concrete Institute

progress through knowledge
Dear Convention Delegates:

As the Mayor of the City of Atlanta, it is a pleasure for me to extend a sincere and cordial welcome for the American Concrete Institute to convene here for your February 19-24, 1989 meeting.

It is an honor for us in Atlanta to be your host. Atlanta is a great city, enjoying a healthy growth, prospering in industry, and moving ahead steadily in cultural development. Atlanta is recognized as the financial, marketing, and communications center of the Southeast. Our city is a major transportation hub and convention center where many fine hotels and restaurants served more than 1,000,000 convention delegates last year.

With all of its cosmopolitan atmosphere, Atlanta has never lost the art of caring for its convention visitors with genuine southern hospitality. You may be assured that your members will receive a cordial welcome in this city of charm, beauty, and gracious living.

Sincerely,

Andrew Young
GREETINGS:

It is a pleasure for me to join with the Atlanta Convention and Visitors Bureau in welcoming the American Concrete Institute to Atlanta for your February 19-24, 1989 meeting.

We have a great state, offering much to her citizens and to visitors. In particular, Atlanta is a beautiful city with many attractions, including fine dining, historic sites, exciting shopping, and excellent hotels.

Georgians are justifiably proud of their state, and you will find them to be enthusiastic and friendly hosts. Once you visit here, you will want to return, as thousands of convention goers do each year.

With kindest regards, I remain

Sincerely,

Joe Frank Harris
ACI’s
ATLANTA
CHAPTER

President
Robert L. Terpening
Planning and Parking Consultant

Vice President
Robert H. Kuhlman
Consulting Engineer

Secretary
LaGrit F. “Sam” Morris
Georgia Concrete and Products Association

Treasurer
Kenneth S. Harmon
Georgia Concrete and Products Association

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Howard Allred
S & ME, Inc.
Eugene H. Boeke, Jr.
Beers Construction Company
Melvyn A. Galinat
Fibermesh, Inc.
Morad G. Ghali
HNTB

Past President
Marvin Lee Hardy
Allied Readymix

The officers, staff, and members of ACI would like to thank the Local Convention Committee, the Hostesses, and ACI’s Atlanta Chapter for their contribution to a successful 1989 Annual Convention.

THANK YOU!
ACI's ATLANTA CHAPTER CONVENTION COMMITTEE

President
Robert L. Terpening
Planning and Parking Consultant

General Chairman
T. Z. Chastain
Chastain Forensics Corporation

Vice General Chairmen
Eugene H. Boeke, Jr.
Beers Construction Company
Robert M. Whitaker
Atlanta Testing Engineers

Secretary-Treasurer
Kenneth S. Harmon
Georgia Concrete and Products Association

Spouse/Guest Program
LaGrit F. "Sam" Morris
Georgia Concrete and Products Association

Technical Program
Donald E. Dixon
Dixon and Associates, Inc.

Social Program
Walter D. "Wally" Walsh, Chairman
Georgia Pacific Corporation

Tours and Transportation
John J. Corigliano
Howard, Needles, Tammen and Bergendoff

Publicity
John Love
Law Engineering Testing Company

Student Programs
Lawrence F. Kahn
Georgia Institute of Technology

Local Exhibits
Robert H. Kuhlman
Consulting Engineer

Contractor Relations
Ralph Hodgins
Master Builders
SPECIAL EVENTS

OPENING RECEPTION
Sunday, February 19, 1989  Grand Ballroom C, D
5:30 PM-7:00 PM
ACI’s Atlanta Chapter is hosting this reception — Welcome to Atlanta!!! Join us tonight and meet the Chapter Members who are to be complimented on a job well done.

COFFEE BAR
Monday through Friday  Grand Salon Foyer
8:00 AM-10:00 AM

CONTRACTORS’ DAY EVENTS
Tuesday, February 21, 1989
9:00 AM-12:00 NOON
Forum: International Concrete Construction  Grand Salon A
Sponsored by the International Activities Committee
Included in this discussion of interesting concrete projects around the world will be a review of the performance of concrete structures in the recent earthquake in Armenia.

12:00 NOON-2:00 PM
Contractors’ Day Luncheon  Grand Ballroom A
Cost: $18.00/person
Topic: “Concrete Performance, Plans, People, and Project Legal Possibilities”
Join the session speakers and many top ACI members for lunch and a talk by prominent Atlanta attorney Overton A. Currie, a specialist in construction-related legal matters. Currie established and heads the construction law section of his firm, which has some 50 lawyers representing contractors throughout the nation and overseas on private and public projects.

2:00 PM-5:00 PM
Concrete Constructibility  Grand Salon A
Sponsored by the Construction Liaison Committee
A relatively informal session where speakers with considerable construction experience will present their views and answer your questions about concrete constructibility.
NOTE: Purchase tickets in advance at the ACI Registration Desk.

4:30 REHABILITATION (Cash Bar)
Tuesday, February 21, 1989  Grand Ballroom Foyer
4:30 PM-6:30 PM

CONCRETE MIXER
Wednesday, February 22, 1989  Grand Ballroom
6:30 PM-8:00 PM
Sponsored by ACI’s Atlanta Chapter, all convention registrants are invited to attend this reception. The ticket is complimentary with the full week registration fee.
AWARDS BREAKFAST
Thursday, February 23, 1989
8:00 AM-10:00 PM
Grand Salon A, B, C
Cost: $13.50/person
Come meet the awardees. Have fun and enjoy a good breakfast. Please purchase tickets before Wednesday at 4:00 PM. Please see page 58 for more details.

CONTINENTAL BREAKFAST MEETINGS
(by invitation only)
Monday, February 20, 1989
318 Steering Committee Breakfast
7:00 AM-8:30 AM
Dekalb
Tuesday, February 21, 1989
New Chairmen Breakfast
7:00 AM-8:30 AM
Grand Salon E
Thursday, February 23, 1989
San Diego Session Chairmen Breakfast
7:00 AM-8:30 AM
Crystal Parlor E

SOCIAL ACTIVITIES PROGRAM
An excellent program has been planned by ACI’s Atlanta Chapter Convention Committee. See pages 30 and 31 for more details.

REGISTRATION INFORMATION

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

Sunday    February 19    1:00 PM- 5:00 PM
Monday    February 20    7:30 AM- 5:00 PM
Tuesday    February 21    8:00 AM- 5:00 PM
Wednesday    February 22    8:00 AM- 5:00 PM
Thursday    February 23    8:00 AM- 5:00 PM
Friday    February 24    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
Nonmember    Peach
Fellow    White
Student    Blue
Spouse    Beige
**DAILY EVENTS**

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

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<td>Ed. Computer Act.</td>
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<td>544-1</td>
<td>Steel Fibers</td>
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<td>544-2</td>
<td>Glass Fibers</td>
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<td>124</td>
<td>Concrete Esthetics</td>
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<td>Soil Cement</td>
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<td>362</td>
<td>Parking Structures</td>
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<td>High Strength</td>
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<td>318-G</td>
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<td>318-H</td>
<td>Seismic Provisions</td>
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<td>TECHNICAL SESSIONS:</td>
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<td>Forum: International Concrete Construction (IAC)</td>
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<td>Computer Programs Related to Evaluation of the ACI Standard 214 (214)</td>
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<td>Constructibility of Bridges (343/345)</td>
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<td>Constructibility of Environmental Engineering Concrete Structures (350)</td>
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* Denotes Theme Session: Concrete Constructibility
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<td>Board of Direction</td>
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<td>No Slump</td>
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<td>Contractors' Day Luncheon</td>
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<td>Fatigue of Concrete</td>
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<td>Removal and Reuse of Concrete</td>
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<td>555</td>
<td>Membership Committee</td>
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<td>200 PM-5:00 PM</td>
<td>Chemical Admixtures</td>
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<td>212</td>
<td>Consolidation of Concrete</td>
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<td>442-SC</td>
<td>Repair of Concrete</td>
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<td>TUESDAY, February 21, 1989</td>
<td>TECHNICAL SESSIONS AND EDUCATIONAL SEMINAR:</td>
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<td>2:00 PM-5:00 PM</td>
<td>Open Paper Session (TAC)</td>
<td>Newton</td>
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<td>★ ★ Human Errors in Concrete Structures (348)</td>
<td>Grand Ballroom D</td>
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<td>★ Specification Tolerances for Concrete Construction (117)</td>
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<td>(This session will also include 117's presentation before the Standards Board.)</td>
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<td>★ ★ High-Strength Concrete (363)</td>
<td>Lisbon</td>
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<td>★ Forum: Concrete Constructibility (CLC)</td>
<td>Grand Salon A</td>
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<td>Use and Application of Video in Concrete Technology (E702)</td>
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<td>2:00 PM-5:30 PM</td>
<td>EAC Educational Activities Committee (Mtg. 2)</td>
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<td>2:00 PM-6:30 PM</td>
<td>318 Standard Building Code (Mtg. 2)</td>
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<td>340 Design Aids</td>
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<td>344 Circular Prestressed Structures</td>
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<td>360 Design of Slabs on Grade</td>
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<td>544 Fiber Reinforced Concrete</td>
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<td>3:30 PM-5:00 PM</td>
<td>209 Creep and Shrinkage in Concrete</td>
<td>Henry</td>
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<td>222 Corrosion</td>
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<td>3:30 PM-6:30 PM</td>
<td>211-A Edit and Coordination</td>
<td>Rockdale</td>
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<td>4:30 PM-6:30 PM</td>
<td>4:30 PM Rehabilitation</td>
<td>Grand Ballroom Foyer</td>
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<td>(Cash Bar)</td>
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<td>5:00 PM-6:30 PM</td>
<td>216 Fire Resistance of Structures</td>
<td>George Washington</td>
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<td>330 Parking Lots</td>
<td>Embassy</td>
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<td>7:30 PM-10:00 PM</td>
<td>TECHNICAL SESSION: Forum: An Evening with the Concrete Giants (123)</td>
<td>Grand Salon D</td>
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* Denotes Theme Session: Concrete Constructibility
** Denotes Hot Topic
## WEDNESDAY

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<tr>
<td>8:00 AM-5:00 PM</td>
<td>Registration</td>
<td>Grand Salon Foyer</td>
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<td>8:30 AM-10:00 AM</td>
<td>121-TG Owners/Designers</td>
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<td>223 Expansive Cement</td>
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<td>233 Ground Slag in Concrete</td>
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<td>343 Concrete Bridge Design</td>
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<td>8:30 AM-11:30 AM</td>
<td>122 Energy Conservation</td>
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<td>311 Inspection of Concrete</td>
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<td>548-D Sulfur Concrete</td>
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<td>8:30 AM-1:00 PM</td>
<td>305 Hot Weather Concreting</td>
<td>Dusseldorf</td>
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<td>524 Plastering (Mtg. 1)</td>
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<td>8:30 AM-6:30 PM</td>
<td>551 Tilt-Up Concrete Construction</td>
<td>Embassy</td>
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<tr>
<td>9:00 AM-12:00 NOON</td>
<td>228 Nondestructive Testing</td>
<td>George Washington</td>
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### DAILY EVENTS

**9:00 AM-12:00 NOON  TECHNICAL SESSIONS:**

- Unique Concrete Construction in Georgia - Part I (ACI's Atlanta Chapter)
- Material Properties and Applications - Fiber Reinforced Concrete and Ferrocement Products - Part I (544/549)
- Creep, Shrinkage, and Temperature Change and Their Effects on Concrete Structures — Computer Analysis - Part I (209)
- Cement Grouting for Hazardous Waste (552)
- Inelastic Design of Concrete Structures (442)

9:00 AM-5:00 PM

- 355 Anchorage to Concrete
- 10:00 AM-11:30 AM
- JBRC Int'l. Joints and Bearings Research Council
- 343/348 Task Committee on LRFD

10:00 AM-1:00 PM

- Convention Committee
- Lisbon

11:30 AM-1:00 PM

- 121-TG Construction Suppliers
- 348 Structural Safety
- Douglas
- Cherokee

* Denotes Theme Session: Concrete Constructibility
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<td>TSC Specifications Committee</td>
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<td>2:00 PM-3:30 PM</td>
<td>121-TG Inspection Testing Agency</td>
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<td>364 Rehabilitation</td>
<td>Cherokee</td>
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<td>2:00 PM-5:00 PM</td>
<td>CAC Chapter Activities Committee</td>
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<td>CMRC Concrete Materials Research Council</td>
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<td>234 Silica Fume in Concrete</td>
<td>Paulding</td>
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<td>303 CIP Architectural</td>
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<td>345 Bridge Construction</td>
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<td>423 Prestressed Concrete</td>
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<td>435 Deflection</td>
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<td>439 Steel Reinforcement</td>
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<td>TECHNICAL SESSIONS: Drift in Tall Buildings (442/441)</td>
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<td>Creep, Shrinkage, and Temperature</td>
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<td>Change and Their Effects on Concrete</td>
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<td>Structures — Computer Analysis - Part II (209)</td>
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<td>Unique Concrete Construction in Georgia — Bridges, Pavements, High Strength - Part II (ACI's Atlanta Chapter)</td>
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<td>Material Properties and Applications - Fiber Reinforced Concrete and Ferrocement Products - Part II (544/549)</td>
<td>Newton</td>
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<td>Accelerated Curing of Concrete (517)</td>
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<td>2:00 PM-6:30 PM</td>
<td>E902-E Concrete Inspector - Nuclear</td>
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<td>306 Cold Weather Concreting</td>
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<td>Quality Assurance</td>
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<td>365 Service Life Prediction</td>
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<td>211 Proportioning Concrete Mixtures</td>
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<td>352 Joints</td>
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<td>6:30 PM-8:00 PM</td>
<td>Concrete Mixer</td>
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<td>(Sponsored by ACI's Atlanta Chapter)</td>
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* Denotes Theme Session: Concrete Constructibility
# THURSDAY

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<td>8:00 AM-10:00 AM</td>
<td><strong>Awards Breakfast</strong></td>
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<td><strong>Specifications for Concrete</strong></td>
<td>Dusseldorf</td>
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<td><strong>General Session and Standards</strong></td>
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<td><strong>Marine Structures</strong></td>
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<td><strong>Standards Board</strong></td>
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<td><strong>Serviceability</strong></td>
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<td>1:30 PM-4:30 PM</td>
<td><strong>Shells</strong></td>
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<td><strong>Research</strong></td>
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<td><strong>Expert Systems</strong></td>
<td>Henry</td>
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<td><strong>Fly Ash and Other Pozzolans in</strong></td>
<td>Grand Salon B</td>
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<td><strong>Concrete</strong></td>
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<td><strong>Meas., Mix., Trans., Plac.</strong></td>
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<td>Thomas Jefferson</td>
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<td><strong>Residential Concrete Work</strong></td>
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<td><strong>Slabs</strong></td>
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<td><strong>Lateral Forces</strong></td>
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<td><strong>Plastering (Mt. 3)</strong></td>
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<td><strong>Polymers in Concrete</strong></td>
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<td>Use of Computers - Part I (118)</td>
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<td>* Automation in Concrete Construction (TAC)</td>
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<td>Board of Direction</td>
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<td>Strength Design</td>
<td>George Washington</td>
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<td>Math. Modeling</td>
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<td>Offshore Concrete Structures</td>
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<td>5:00 PM-6:30 PM</td>
<td>Hydraulic Cements</td>
<td>Henry</td>
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| FRIDAY, February 24, 1989 | DAILY EVENTS                                             |               |
| 8:00 AM-10:00 AM | Registration                                             | Grand Salon Foyer |
| 8:30 AM-1:00 PM | Nuclear Vessels                                          | Council        |
| 9:00 AM-12:00 NOON | TECHNICAL SESSIONS:                                      |               |
|               | Use of Computers - Part II (118)                         | Club, State   |
|               | Economics of Concrete Shell Structures (334)            | Douglas       |
|               | Uses and Applications of Latex Modified Hydraulic Cement Mortars (548) | Newton      |
# NUMERICAL COMMITTEE MEETING SCHEDULE

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<td>Prestressed Precast</td>
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<td>8:30A - 1:00P</td>
<td>Grand Salon D</td>
</tr>
<tr>
<td>318-H</td>
<td>Seismic Provisions</td>
<td>2/21</td>
<td>8:30A - 1:00P</td>
<td>Lisbon</td>
</tr>
<tr>
<td>325</td>
<td>Concrete Pavements</td>
<td>2/20</td>
<td>2:00P - 3:30P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>325-E</td>
<td>RCC Pavements</td>
<td>2/20</td>
<td>8:30A - 11:30A</td>
<td>Cherokee</td>
</tr>
<tr>
<td>325-TG</td>
<td>316R-82 Revision</td>
<td>2/20</td>
<td>11:30A - 1:00P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>330</td>
<td>Parking Lots</td>
<td>2/21</td>
<td>5:00P - 6:30P</td>
<td>Embassy</td>
</tr>
<tr>
<td>332</td>
<td>Residential Concrete Work</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Forsythe</td>
</tr>
<tr>
<td>334</td>
<td>Shells</td>
<td>2/23</td>
<td>1:30P - 4:30P</td>
<td>Embassy</td>
</tr>
<tr>
<td>336</td>
<td>Footings (Mtg. 1)</td>
<td>2/20</td>
<td>11:30A - 1:00P</td>
<td>Room 438</td>
</tr>
<tr>
<td>336</td>
<td>Footings (Mtg. 2)</td>
<td>2/20</td>
<td>2:00P - 7:00P</td>
<td>Room 438</td>
</tr>
<tr>
<td>340</td>
<td>Design Aids</td>
<td>2/21</td>
<td>2:00P - 6:30P</td>
<td>Forsythe</td>
</tr>
<tr>
<td>343</td>
<td>Concrete Bridge Design</td>
<td>2/22</td>
<td>8:30A - 10:00A</td>
<td>Cherokee</td>
</tr>
<tr>
<td>343/43</td>
<td>Task Committee on LRFD</td>
<td>2/22</td>
<td>10:00A - 11:30A</td>
<td>Cherokee</td>
</tr>
<tr>
<td>344</td>
<td>Circ. Prestressed Structures</td>
<td>2/21</td>
<td>2:00P - 6:30P</td>
<td>Council</td>
</tr>
<tr>
<td>344</td>
<td>Editorial Sub Committee</td>
<td>2/20</td>
<td>2:00P - 6:30P</td>
<td>Room 452</td>
</tr>
<tr>
<td>344</td>
<td>Seismic Sub Committee</td>
<td>2/21</td>
<td>8:30A - 1:00P</td>
<td>Room 436</td>
</tr>
<tr>
<td>345</td>
<td>Bridge Construction</td>
<td>2/22</td>
<td>2:00P - 5:00P</td>
<td>G. Washington</td>
</tr>
<tr>
<td>347</td>
<td>Formwork for Concrete</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Cabinet</td>
</tr>
<tr>
<td>348</td>
<td>Structural Safety</td>
<td>2/22</td>
<td>11:30A - 1:00P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>348/43</td>
<td>Task Committee on LRFD</td>
<td>2/22</td>
<td>10:00A - 11:30A</td>
<td>Cherokee</td>
</tr>
<tr>
<td>349</td>
<td>Nuclear Structures</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Henry</td>
</tr>
<tr>
<td>349-1</td>
<td>General Materials Const.</td>
<td>2/20</td>
<td>8:30A - 1:00P</td>
<td>Board</td>
</tr>
<tr>
<td>349-2</td>
<td>Design (Mtg. 1)</td>
<td>2/19</td>
<td>2:00P - 6:30P</td>
<td>Board</td>
</tr>
<tr>
<td>349-2</td>
<td>Design (Mtg. 2)</td>
<td>2/20</td>
<td>8:30A - 1:00P</td>
<td>Board</td>
</tr>
<tr>
<td>350</td>
<td>Embedded Steel (Mtg. 1)</td>
<td>2/19</td>
<td>2:00P - 6:30P</td>
<td>Directors</td>
</tr>
<tr>
<td>350</td>
<td>Embedded Steel (Mtg. 2)</td>
<td>2/20</td>
<td>8:30A - 1:00P</td>
<td>Directors</td>
</tr>
<tr>
<td>350</td>
<td>Environmental Structures</td>
<td>2/21</td>
<td>2:00P - 5:00P</td>
<td>Clayton</td>
</tr>
<tr>
<td>351</td>
<td>Foundation of Static Equip.</td>
<td>2/20</td>
<td>8:30A - 11:30A</td>
<td>John Adams</td>
</tr>
<tr>
<td>352</td>
<td>Joints</td>
<td>2/22</td>
<td>3:30P - 6:30P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>355</td>
<td>Grouting of Equip./Mach.</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Club</td>
</tr>
<tr>
<td>357</td>
<td>Offshore Concrete Structures</td>
<td>2/23</td>
<td>3:30P - 6:30P</td>
<td>G. Washington</td>
</tr>
<tr>
<td>357-1</td>
<td>Serviceability</td>
<td>2/23</td>
<td>1:30P - 2:30P</td>
<td>G. Washington</td>
</tr>
<tr>
<td>357-2</td>
<td>Strength Design</td>
<td>2/23</td>
<td>2:30P - 3:30P</td>
<td>G. Washington</td>
</tr>
<tr>
<td>357-3</td>
<td>Marine Structures</td>
<td>2/23</td>
<td>12:30P - 1:30P</td>
<td>G. Washington</td>
</tr>
<tr>
<td>358</td>
<td>Concrete Guideways</td>
<td>2/21</td>
<td>2:00P - 5:00P</td>
<td>Room 436</td>
</tr>
<tr>
<td>359</td>
<td>Nuclear Vessels</td>
<td>2/24</td>
<td>8:30A - 1:00P</td>
<td>Council</td>
</tr>
<tr>
<td>359-2</td>
<td>Design</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Room 438</td>
</tr>
<tr>
<td>359-3</td>
<td>Materials Const. &amp; Ex.</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Room 436</td>
</tr>
<tr>
<td>360</td>
<td>Design of Slabs on Grade</td>
<td>2/21</td>
<td>2:00P - 6:30P</td>
<td>Milan</td>
</tr>
<tr>
<td>362</td>
<td>Parking Structures</td>
<td>2/21</td>
<td>8:30A - 11:30A</td>
<td>Henry</td>
</tr>
<tr>
<td>363</td>
<td>High Strength</td>
<td>2/21</td>
<td>8:30A - 11:30A</td>
<td>Cherokee</td>
</tr>
<tr>
<td>364</td>
<td>Rehabilitation</td>
<td>2/22</td>
<td>2:00P - 3:30P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>365</td>
<td>Service Life Prediction</td>
<td>2/22</td>
<td>3:30P - 5:00P</td>
<td>Lisbon</td>
</tr>
<tr>
<td>366</td>
<td>Precast Concrete Pipelines</td>
<td>2/21</td>
<td>9:00A - 12:00P</td>
<td>Lisbon</td>
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<tr>
<td>367</td>
<td>Precast Concrete Chimneys</td>
<td>2/21</td>
<td>11:30A - 1:00P</td>
<td>Room 438</td>
</tr>
<tr>
<td>408</td>
<td>Bond/Devel. of Reinforcement</td>
<td>2/21</td>
<td>9:00A - 12:00P</td>
<td>Dekalb</td>
</tr>
<tr>
<td>421</td>
<td>Slabs</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Council</td>
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<tr>
<td>423</td>
<td>Prestressed Concrete</td>
<td>2/22</td>
<td>2:00P - 5:00P</td>
<td>Grand Salon A</td>
</tr>
<tr>
<td>435</td>
<td>Deflection</td>
<td>2/22</td>
<td>2:00P - 5:00P</td>
<td>Club</td>
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<tr>
<td>437</td>
<td>Strength of Structures</td>
<td>2/20</td>
<td>2:00P - 3:30P</td>
<td>Rockdale</td>
</tr>
<tr>
<td>439</td>
<td>Steel Reinforcement</td>
<td>2/22</td>
<td>2:00P - 5:00P</td>
<td>Gwinnett</td>
</tr>
<tr>
<td>441</td>
<td>Reinforced Concrete Columns</td>
<td>2/20</td>
<td>3:30P - 6:30P</td>
<td>Directors</td>
</tr>
<tr>
<td>COMM.</td>
<td>COMM. SHORT TITLE</td>
<td>DATE</td>
<td>TIME</td>
<td>ROOM</td>
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</tr>
<tr>
<td>442</td>
<td>Lateral Forces</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Cherokee</td>
</tr>
<tr>
<td>442-SC</td>
<td>Inelastic Design</td>
<td>2/21</td>
<td>2:00P - 5:00P</td>
<td>Embassy</td>
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<tr>
<td>444</td>
<td>Models of Concrete Structures</td>
<td>2/21</td>
<td>2:00P - 3:30P</td>
<td>Directors</td>
</tr>
<tr>
<td>445</td>
<td>Shear &amp; Torsion</td>
<td>2/21</td>
<td>8:30A - 1:00P</td>
<td>Cobb</td>
</tr>
<tr>
<td>446</td>
<td>Fracture Mechanics</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Fulton</td>
</tr>
<tr>
<td>446-1</td>
<td>Sub 1</td>
<td>2/20</td>
<td>8:30A - 10:00A</td>
<td>Club</td>
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<tr>
<td>446-2</td>
<td>Sub 2</td>
<td>2/20</td>
<td>10:00A - 11:30A</td>
<td>Club</td>
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<tr>
<td>446-3</td>
<td>Sub 3</td>
<td>2/20</td>
<td>10:00A - 11:30A</td>
<td>State</td>
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<tr>
<td>446-4</td>
<td>Sub 4</td>
<td>2/20</td>
<td>8:30A - 10:00A</td>
<td>State</td>
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<td>503</td>
<td>Adhesives (Mt. 1)</td>
<td>2/21</td>
<td>8:30A - 1:00P</td>
<td>Fulton</td>
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<tr>
<td>503</td>
<td>Adhesives (Mt. 2)</td>
<td>2/21</td>
<td>2:00P - 3:30P</td>
<td>Fulton</td>
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<tr>
<td>504</td>
<td>Joint Sealants</td>
<td>2/21</td>
<td>8:30A - 10:00A</td>
<td>Rockdale</td>
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<tr>
<td>506</td>
<td>Shotcreting</td>
<td>2/21</td>
<td>8:30A - 1:00P</td>
<td>Crystal Parlor C</td>
</tr>
<tr>
<td>515</td>
<td>Coatings for Concrete</td>
<td>2/20</td>
<td>3:30P - 6:30P</td>
<td>Dekalb</td>
</tr>
<tr>
<td>517</td>
<td>Accelerated Curing</td>
<td>2/23</td>
<td>2:00P - 3:30P</td>
<td>T. Jefferson</td>
</tr>
<tr>
<td>523</td>
<td>Insulating &amp; Cellular</td>
<td>2/21</td>
<td>10:00A - 11:30A</td>
<td>Embassy</td>
</tr>
<tr>
<td>524</td>
<td>Plastering (Mt. 1)</td>
<td>2/22</td>
<td>8:30A - 1:00P</td>
<td>Board</td>
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<td>524</td>
<td>Plastering (Mt. 2)</td>
<td>2/22</td>
<td>2:00P - 3:30P</td>
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<td>524</td>
<td>Plastering (Mt. 3)</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Board</td>
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<td>530</td>
<td>Masonry Structures</td>
<td>2/21</td>
<td>8:30A - 8:30P</td>
<td>Cabinet</td>
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<tr>
<td>530-TG</td>
<td>Modulus of Elasticity</td>
<td>2/20</td>
<td>8:30A - 1:00P</td>
<td>Council</td>
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<tr>
<td>530-TG</td>
<td>Veneers &amp; Connectors</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Council</td>
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<td>531</td>
<td>Concrete Masonry</td>
<td>2/22</td>
<td>8:30A - 11:30A</td>
<td>Cabinet</td>
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<tr>
<td>533</td>
<td>Precast Panels</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>State</td>
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<td>543</td>
<td>Concrete Piles (Mt. 1)</td>
<td>2/20</td>
<td>8:30A - 1:00P</td>
<td>Crystal Parlor A</td>
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<tr>
<td>543</td>
<td>Concrete Piles (Mt. 2)</td>
<td>2/20</td>
<td>2:00P - 3:30P</td>
<td>Crystal Parlor A</td>
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<tr>
<td>544</td>
<td>Fiber Reinforced Concrete</td>
<td>2/21</td>
<td>2:00P - 6:30P</td>
<td>Grand Salon C</td>
</tr>
<tr>
<td>544-1</td>
<td>Steel Fibers</td>
<td>2/21</td>
<td>8:30A - 10:00A</td>
<td>Crystal Parlor A</td>
</tr>
<tr>
<td>544-2</td>
<td>Glass Fibers</td>
<td>2/21</td>
<td>8:30A - 10:00A</td>
<td>Crystal Parlor E</td>
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<tr>
<td>544-3</td>
<td>Synthetic Fibers</td>
<td>2/21</td>
<td>10:00A - 11:30A</td>
<td>Crystal Parlor A</td>
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<tr>
<td>544-4</td>
<td>Vegetable Fibers</td>
<td>2/21</td>
<td>10:00A - 11:30A</td>
<td>Crystal Parlor E</td>
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<tr>
<td>544-5</td>
<td>Structural Design</td>
<td>2/21</td>
<td>11:30A - 1:00P</td>
<td>Crystal Parlor A</td>
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<tr>
<td>544-6</td>
<td>State-of-the-Art</td>
<td>2/21</td>
<td>11:30A - 1:00P</td>
<td>Crystal Parlor A</td>
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<tr>
<td>545</td>
<td>Concrete Railroad Ties</td>
<td>2/20</td>
<td>11:30A - 1:00P</td>
<td>Club</td>
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<tr>
<td>546</td>
<td>Repair of Concrete</td>
<td>2/21</td>
<td>2:00P - 5:00P</td>
<td>Grand Salon D</td>
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<tr>
<td>546-1</td>
<td>Underwater Repair</td>
<td>2/20</td>
<td>3:30P - 6:30P</td>
<td>Cherokee</td>
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<tr>
<td>548</td>
<td>Polymers in Concrete</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>Grand Salon C</td>
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<tr>
<td>548-A</td>
<td>Polymer PC Concrete</td>
<td>2/20</td>
<td>2:00P - 5:00P</td>
<td>Gwinnett</td>
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<tr>
<td>548-B</td>
<td>PC Overlays</td>
<td>2/21</td>
<td>8:30A - 11:30A</td>
<td>Gwinnett</td>
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<tr>
<td>548-D</td>
<td>Sulfur Concrete</td>
<td>2/22</td>
<td>8:30A - 11:30A</td>
<td>Room 438</td>
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<tr>
<td>549</td>
<td>Ferrocement</td>
<td>2/21</td>
<td>11:30A - 1:00P</td>
<td>Board</td>
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<tr>
<td>550</td>
<td>Precast Concrete Structures</td>
<td>2/23</td>
<td>2:00P - 5:00P</td>
<td>John Adams</td>
</tr>
<tr>
<td>551</td>
<td>Tilt-Up Concrete Construction</td>
<td>2/22</td>
<td>8:30A - 8:30P</td>
<td>Embassy</td>
</tr>
<tr>
<td>552</td>
<td>Cement Grouting (Mt. 1)</td>
<td>2/20</td>
<td>6:00P - 9:00P</td>
<td>State</td>
</tr>
<tr>
<td>552</td>
<td>Cement Grouting (Mt. 2)</td>
<td>2/21</td>
<td>2:00P - 5:00P</td>
<td>Board</td>
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<tr>
<td>553</td>
<td>Swimming Pools</td>
<td>2/20</td>
<td>10:00A - 11:30A</td>
<td>Room 438</td>
</tr>
<tr>
<td>554</td>
<td>Bearing Systems</td>
<td>2/20</td>
<td>2:00P - 3:30P</td>
<td>Board</td>
</tr>
<tr>
<td>555</td>
<td>Removal &amp; Reuse of Concrete</td>
<td>2/21</td>
<td>2:00P - 3:30P</td>
<td>State</td>
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</tbody>
</table>

**NOTE:** Committees not listed did not request a meeting at this convention.
WHERE'S THAT MEETING ROOM?

Board ............................................ Fourth Floor
Cabinet ............................................ Fourth Floor
Cherokee ........................................ Second Floor
Clayton ........................................... Second Floor
Club ................................................. Fourth Floor
Cobb ............................................... Second Floor
Council .......................................... Fourth Floor
Crystal Parlors A through G ............... First Floor
Dekalb ............................................. Second Floor
Directors ......................................... Fourth Floor
Douglas ............................................ Second Floor
Dusseldorf ....................................... Third Floor
Embassy .......................................... Fourth Floor
Fayette ............................................. Second Floor
Forsythe .......................................... Second Floor
Fulton .............................................. Second Floor
George Washington ......................... Third Floor
Grand Ballroom Foyer ....................... Second Floor
Grand Ballrooms A through D, East, West ... Second Floor
Grand Salons A through E, Foyer .......... Second Floor
Gwinnett ............................................ Second Floor
Henry ............................................... Second Floor
International Rooms ......................... Third Floor
(Dusseldorf, Lisbon, Milan, Strasbourg and Vienna)
John Adams ..................................... Third Floor
Lisbon ............................................. Third Floor
Milan ............................................... Third Floor
Newton ............................................ Second Floor
Paulding ......................................... Second Floor
Rockdale .......................................... Second Floor
Room 436 ......................................... Fourth Floor
Room 438 ......................................... Fourth Floor
Room 452 ......................................... Fourth Floor
State ............................................... Fourth Floor
Strasbourg ........................................ Third Floor
Thomas Jefferson ............................. Third Floor
Vienna ............................................. Third Floor
Walton ............................................. Second Floor
**WORLD OF CONCRETE**

**SPECIAL BONUS**

Be sure to visit the World of Concrete exhibits at the Georgia World Congress Center. ACI has arranged for FREE general admission to the exhibits. To obtain your complimentary registration, simply go to the special ACI registration desk which has been set up at the exhibit hall and tell the registrar you are attending the ACI convention. This will ensure that your general admission fee to the exposition is complimentary.

Do not miss this chance to visit with over 700 exhibitors as they introduce state-of-the-art technology for the coming decade.

In addition to the exhibit booths, there will be four special interest pavilions — computer, paving, precasting, and material handling/ready-mix. Also for your pleasure, will be full-scale demonstrations that focus on every-day field problems, and solutions. You will see live demonstrations featuring concrete flatwork construction and demolition.

By visiting the World of Concrete exhibition you will truly experience a well rounded week of concrete construction — from initial design through finished product. Do not miss this opportunity.

Shuttle bus service from the Atlanta Hilton & Towers and the Georgia World Congress Center will be provided free of charge. Further information regarding the shuttle service can be found on page 32.
SOCIAL ACTIVITIES PROGRAM

Atlanta Hilton and Towers Hotel
Hospitality Room — Strasbourg/Vienna

SUNDAY, February 19, 1989
1:00 PM - 5:00 PM  Spouse Registration —
Registration will be held in the ACI Registration
Area of the Atlanta Hilton and Towers Hotel.

5:30 PM - 7:00 PM  Opening Reception —
Sponsored by ACI's Atlanta Chapter. To be held
in the Grand Ballroom C and D.

MONDAY, February 20, 1989 through
THURSDAY, February 23, 1989

8:30 AM - 3:00 PM  Hospitality Room —
A hostess will be available to register new guests
and to answer your questions. Continental break-
fast will be available from 8:30 AM - 10:00 AM,
daily.

MONDAY, February 20, 1989
10:00 AM - 11:00 AM  Overview of Atlanta —
Presentation that will give you a view of Atlanta.
Hand-out information on places to visit,
restaurants, and shopping. To be held in the
Grand Salon A.  No Charge.

3:00 PM - 5:00 PM  Afternoon Tea —
President Bennett's Suite, Suite Number 2742.
Please take any elevator to the Towers Level.
No Charge.

TUESDAY, February 21, 1989
11:30 AM - 2:30 PM  * Presenting Atlanta —
Visit the Cable News Network Center and
Cyclorama. Lunch is included.  $32.00/person
WEDNESDAY, February 22, 1989

10:00 AM - 3:00 PM  * Atlanta Landmarks —
See the Carter Presidential Center and visit the Fox Theatre. Lunch is included. $38.00/person

6:30 PM - 8:00 PM  Concrete Mixer —
Sponsored by ACI’s Atlanta Chapter. To be held in the Grand Ballroom.

THURSDAY, February 23, 1989

8:00 AM - 10:00 AM  Awards Breakfast —
Come meet the awardees and enjoy a good breakfast. $13.50/person

9:30 AM - 2:30 PM  * Elegant Atlanta —
Today we explore the Governor’s Mansion, Swan House, Tullie Smith House, and McElreath Hall. Lunch will be at the Swan Coach House. $34.00/person

10:00 AM - 1:00 PM  General Session —
The keynote speaker will be Lawrence L. Gellerstedt, Jr., Beers Construction Company, Atlanta, Georgia. All are invited to attend. No Charge.

FRIDAY, February 24, 1989

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

* Buses for tours will depart from the Atlanta Hilton and Towers Hotel at the tour times listed at the Harris Street entrance.
SHUTTLE SERVICE

SHUTTLE BUS SERVICE
On show days, complimentary shuttle bus service will be provided by WOC between the Georgia World Congress Center and the official WOC hotel facilities. A frequent and efficient schedule will be maintained and all buses will be easily identified by the World of Concrete signs.

Bus service will be in effect during these hours:

- Sunday, February 19, 1:00 PM to 6:00 PM
- Monday, February 20, 7:10 AM to 6:00 PM
- Tuesday, February 21, 7:10 AM to 6:00 PM
- Wednesday, February 22, 7:10 AM to 6:00 PM
- Thursday, February 23, 7:10 AM to 3:00 PM

For time schedules and information, refer to the shuttle bus information sign in the hotel lobby.

Your badge will provide this complimentary shuttle bus service to you.

1. American Hotel
2. Atlanta Central Travelodge
3. Atlanta Hilton & Towers
4. Atlanta Marriott Marquis
5. Days Inn Downtown
6. Holiday Inn Downtown
7. Hotel Ibis
8. Hyatt Regency Atlanta
9. Pierremont Plaza
10. Quality Inn Habersham
11. Radisson Hotel Atlanta
12. Ritz-Carlton Atlanta
13. Westin Peachtree Plaza
14. Omni Hotel at CNN Center
### Personal Log
#### 1989 Annual Convention

**Delegate's Name**

**Sunday, February 19, 1989**

- 5:30 PM — Opening Reception
  - Grand Ballroom C, D

**Monday, February 20, 1989**

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**Tuesday, February 21, 1989**

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MONDAY, February 20, 1989
1:00 PM-5:30 PM
Room: Grand Ballroom A

EDUCATOR/STUDENT PROGRAM AND SEMINAR
Sponsored by Committee E801

Session Moderator: Noel J. Everard
Professor
The University of Texas at Arlington
Arlington, Texas

OPENING REMARKS - Student Projects
Noel J. Everard, Professor, The University of Texas at Arlington, Arlington, Texas

Why Students Should Learn to Use and to Program Computers
Ahmad Khammash, Horizon Computer Company, Arlington, Texas

How ACI Student Competitions Helped Me in Learning the Technology of Concrete

High School Student Concrete Competitions at Southern Illinois University
Luke M. Snell, Chairman of Construction, Department of Construction, Southern Illinois University, Edwardsville, Illinois

Concrete Cube Testing Competition
Shan Somayaji, Associate Professor, California Polytech State University, Department of Civil Engineering, San Luis Obispo, California

Closing Remarks and Adjournment
Noel J. Everard, Professor, The University of Texas at Arlington, Arlington, Texas
TECHNICAL SESSION

MONDAY, February 20, 1989
2:00 PM-5:00 PM
Room: Grand Salon A

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
Bechtel Eastern Power Corporation
Gaithersburg, Maryland

Investigation into Absorption of Superplasticizer in Fresh Cement Paste
Sidney Diamond, Professor; K. Matsukawa, Graduate Student, School of Civil Engineering, Purdue University, West Lafayette, Indiana

Improvement of the Properties of Fresh Concrete
Per Just Andersen, Chemical Engineer; Niels Thaulow, Senior Consultant; Jens Holm, Vice President, G.M. Idorn Consult A/S, Holte, Denmark

Time-Lapse Cinematography of Plastic Shrinkage Cracking of Portland Cement and Silica Fume (Dry-Uncompacted, Dry-Densified, and Water-Slurry) Pastes
Menashi D. Cohen, Associate Professor, School of Civil Engineering, Purdue University, West Lafayette, Indiana

Research-in-Progress on Silica Fume Concrete
Mark D. Luther, Manager of Technical Services; Fedrico Lopez-Florez, Manager of Quality System and Chemical Technology; Robert L. Robertson, Laboratory Technician; Steve Tutukey, Laboratory Technician, Elkem Materials, Inc., Pittsburgh, Pennsylvania

Determination of the W/C Ratio of Hardened Concrete by Means of Fluorescence Microscopy
Niels Thaulow, Senior Consultant; Kim Thordal Andersen, Geologist and Petrographer; Jens Holm, Vice President, G.M. Idorn Consult A/S, Holte, Denmark

Effect of Stresses on the Ultrasonic Pulse Velocity in Concrete
John S. Popovics, Graduate Student, Department of Civil Engineering, Drexel University, Philadelphia, Pennsylvania

Bond Properties of Concrete Containing High Volume Fly Ash
P. Balaguru, Professor; and Grace Kwan, Graduate Student, Rutgers, The State University of New Jersey, Piscataway, New Jersey

Structural Behavior of Concrete Using Lightweight Aggregate Including Techniques of Manufacturing it
Gajanan M. Sabnis, Professor; Abdul Qayyum, Professor, Department of Civil Engineering, Howard University, Washington, D.C.

Tests of Twenty-Seven Year Old Prestressed Concrete Bridge Beams
Gregory C. Frantz, Associate Professor; Chandrakanth V. Shenoy, Research Assistant; Valeire E. Murray, Research Assistant, Department of Civil Engineering, University of Connecticut, Storrs, Connecticut

Direct Field Measurement of Prestress Losses in Box Girder Bridges
M. "Sa'id" Saidi, Professor and Chairman; Joseph Shields, Department of Civil Engineering, University of Nevada-Reno, Reno, Nevada
CONSTRUCTIBILITY OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES

Sponsored by Committee 350

Session Chairman: Satish K. Sachdev
Executive Vice President
Klein and Hoffman, Inc.
Chicago, Illinois

Coping with the Low W/C Ratios Required by ACI 350 R-83
Patrick J. Creegan, Chief Engineer, Vice President, Engineering-Science, Inc., Berkeley, California

Constructibility for Profitability
W. Robert Little, Vice President, Nova Constructors, Inc., Fairfax, Virginia

Concrete Joints: Design/Constructibility
Roger H. Wood, Vice President, Camp, Dresser and McKee, Denver, Colorado

Design and Construction of Dos Rios Facility
Donald L. Dube, Senior Manager, Structural Engineering, Malcolm Pirnie, Inc., White Plains, New York

Constructibility of Environmental Concrete Structures: An Overview
Anand Gogate, Anand Gogate Consulting Engineering, Worthington, Ohio
TUESDAY, February 21, 1989
9:00 AM-12:00 NOON
Room: Newton

COMPUTER PROGRAMS AND APPLICATIONS RELATED TO THE ACI STANDARD 214 FOR QUALITY CONTROL AND QUALITY ASSURANCE

Sponsored by Committee 214

Session Chairman: Tarun R. Naik
Associate Professor
University of Wisconsin
Milwaukee, Wisconsin

Session Co-Chairman: V. Ramakrishnan
Professor of Civil Engineering
South Dakota School of Mines and Technology
Rapid City, South Dakota

Introduction
Tarun R. Naik, Associate Professor, University of Wisconsin, Milwaukee, Wisconsin

Activities of the ACI Committee 214
V. Ramakrishnan, Professor of Civil Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota

Concrete Mix Data Entry System
G.J. Czuppon; H. Caratin, Concrete Control Superintendent, Ontario Hydro, Toronto, Ontario, Canada

Analysis of Concrete Strength for Quality Control Using PC Database Software
R.L. Dilly, Assistant Professor, College of Technology, University of Houston, Houston, Texas; M.P.J. Olsen, Assistant Professor of Civil Engineering, Texas A&M University, College Station, Texas; W.L. Vogt, President, MRA/Materials Engineers, Inc., Houston, Texas

Using a Spreadsheet to Perform Statistical Analysis Based on ACI 214
Tarun R. Naik, Associate Professor of Civil Engineering, University of Wisconsin, Milwaukee, Wisconsin; John Zachar, Professor of Architectural Engineering, Milwaukee School of Engineering, Milwaukee, Wisconsin

Evaluating Test Results from High-Strength Concrete
Weston T. Hester, Associate Professor, University of California, Berkeley, California

Statistical Analysis of Concrete Strength for the Nonprogrammer
Russell Grant, Project Engineer, Southern California Soil and Testing, Inc., San Diego, California

A Pilot ACI 214 KBS for the Technician
Paul C. Hoffman, Associate Professor, Villanova University, Villanova, Pennsylvania
TECHNICAL SESSION

TUESDAY, February 21, 1989
9:00 AM-12:00 NOON
Room: Grand Salon C

CONSTRUCTIBILITY OF BRIDGES
Sponsored by Committees 343 and 345

Session Chairman: Harold R. Sandberg
Chairman of the Board
Alfred Benesch & Company
Chicago, Illinois

An Owner's View of Constructibility
Bobby L. Moore, Assistant State Construction Engineer, Georgia
Department of Transportation, Atlanta, Georgia

A Designer's View of Constructibility
John Clark, Andersen Bjornstad Kane Jacobs, Inc., Seattle, Washington

A Contractor's View of Constructibility
Scott Lynn, President, Flatiron Structures Company, Longmont, Colorado

A Construction Engineer's View of Constructibility
Anthony F. Gee, Consultant, Tony Gee & Quandel, Atlanta, Georgia
CONTRACTORS’ DAY

TUESDAY, February 21, 1989
9:00 AM-12:00 PM
Room: Grand Salon A

FORUM: INTERNATIONAL CONCRETE CONSTRUCTION
Sponsored by the International Activities Committee

Session Chairman: Stewart C. Watson
Kinematics
East Amherst, New York

Short-Term Construction of a Large Building by Site-Precast Concrete
Kiyoshi Horikawa, Manager, Structural Engineering Section; Hisakazu Saiga, Senior Manager, Construction Field Office; Hajime Takano, Manager in Charge of Construction, Takenaka Corporation, Tokyo, Japan

Brazil’s First Roller Compacted Concrete Dam
Francisco Hollanda, Brazil

Shotcrete for Tunnel Structures
Giovanni Palermo, Brazil

The New Tampico Bridge in Mexico
Modesto Armijo, Mexico

Performance of Concrete Structures in the 1988 Armenian Earthquake
H.S. Lew, National Institute of Standards and Technology, Gaithersburg, Maryland

CONTRACTORS’ DAY LUNCHEON
Topic: “Concrete Performance, Plans, People, and Project Legal Possibilities”
Room: Grand Ballroom A
Cost: $18.00/person
12:00 NOON - 2:00 PM

Speaker: Overton A. Currie, partner in Smith, Currie & Hancock, attorneys, Atlanta, Georgia

Join the session speakers and many top ACI members for lunch and a talk by prominent Atlanta attorney Overton A. Currie, a specialist in construction-related legal matters. Currie established and heads the construction law section of his firm, which has some 50 lawyers representing contractors throughout the nation and overseas on private and public projects.

NOTE: Purchase tickets in advance at the ACI Registration Desk.
CONTRACTORS’ DAY

TUESDAY, February 21, 1989
2:00 PM-5:00 PM

CONCRETE CONSTRUCTIBILITY
Sponsored by the Construction Liaison Committee

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

Constructibility of Concrete Slabs
Chuck Ayers, C. Ayers Ltd., Northville, Michigan; Ross Martin, Director, Engineering and Technical Services, Baker Concrete Construction, Hamilton, Ohio

How to Handle Reinforcing Steel Congestion
Jim Elmlinger, Structural Engineer, Robert Englekirk Consulting Engineers, Los Angeles, California

Construction Innovations in a Large Industrial Wastewater Plant
Frank M. Mansbach, Flour Daniel, Inc., Greenville, South Carolina; Dewey Johnson, Tennessee Eastman Company, Kingsport, Tennessee

Construction Considerations for High-Strength Concrete
Steven H. Gebler and Anthony E. Fiorato, Construction Technology Laboratories, Inc., Skokie, Illinois

Advancing Construction Productivity
Joseph F. Lamond, U.S. Army Corps of Engineers, Washington, DC
TECHNICAL SESSION

TUESDAY, February 21, 1989
2:00 PM-5:00 PM
Room: Grand Ballroom D

HUMAN ERRORS IN CONCRETE STRUCTURES
Sponsored by Committee 348

Session Chairman: Andrzej S. Nowak
Professor
Department of Civil Engineering
University of Michigan
Ann Arbor, Michigan

Introduction
Human Errors in Concrete Structures
Andrzej S. Nowak, Professor, Department of Civil Engineering,
University of Michigan, Ann Arbor, Michigan

Minimizing Errors of Minimizing Liability?
Harold R. Sandberg, Chairman of the Board, Alfred Benesch &
Company, Chicago, Illinois

Problems in Concrete Structures — Design and Construction
Deficiencies
Kevin A. Michols, Senior Structural Engineer, Construction Technology
Laboratories, Inc., Skokie, Illinois

Human Errors and Structural Reliability
Dan M. Frangopol, Professor, Department of Civil, Environmental, and
Architectural Engineering, University of Colorado, Boulder, Colorado

Sensitivity Analysis for Human Errors
Abdulrahim Arafah, Assistant Professor, Department of Civil Engi-
neering, King Saud University, Saudi Arabia; Andrzej S. Nowak,
Professor, Department of Civil Engineering, University of Michigan,
Ann Arbor, Michigan

Modeling Inspection Decisions in Concrete Construction
Juan A. Melgarejo, Project Engineer, Blount, Inc., Detroit, Michigan

Application of Statistical Quality Control Techniques to Human Errors
Norris Stubbs, Professor, College of Architecture, Texas A&M
University, College Station, Texas
TUESDAY, February 21, 1989
2:00 PM-5:00 PM
Room: Grand Ballroom C

SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION

Sponsored by Committee 117

Session Chairman: W. Robert Little
Nova Constructors, Inc.
Fairfax Station, Virginia

CIP Vertically Slipformed Structures
Carl Togni, Chief Civil Engineer, American Electric Power, Columbus, Ohio

Mass Concrete Structures, Siphons, and Culverts

Cast-in-Place Bridges, Concrete Pavements
Eldon Tipping, President, Structural Services, Dallas, Texas

STANDARDS PRESENTATION
Specifications for Tolerances for Concrete Construction and Materials (ACI 117)

NOTE: All other Standards will be presented at the regularly scheduled Standards Presentation on February 23.

NOTE: This session includes the Committee's presentation to the Standards Board.
 HIGH-STRENGTH CONCRETE
Sponsored by Committee 363

Session Chairman: J. Craig Williams
Vice President
Master Builders, Inc.
Cleveland, Ohio

Getting What Was Asked for with High-Strength Concrete
Bryce P. Simons, Simons Engineering Services, Carnation, Washington

How Microsilica Affects High-Strength Concrete - Laboratory Studies and Project Data
Thomas G. Weil, Senior Product Manager; and Lawrence R. Roberts, Director of Technical Service, W.R. Grace & Company, Cambridge, Massachusetts

Selection of the Superplasticizer/Cement Combination for Minimizing Slump Losses When Making Very High-Strength Concrete
Emile Hanna, Daniel Perraton, and Pierre-Claude Aitcin, University of Sherbrooke, Sherbrooke, Quebec, Canada

Guidelines for the Use of Superplasticizer in Producing High-Strength Concrete
William Eckert, Ziad Zakka, James Ernzen, and Ramon L. Carrasquillo, The University of Texas at Austin, Austin, Texas

The Construction of the Concrete Platforms in the North Sea - An Advanced Way of Using High-Strength Concrete
Hanne Ronneberg, Betokem Industrier A/S Scancem Chemicals A/S, Skarer, Norway; and Malvin Sandvik, Norwegian Contractors A/S, Stabekk, Norway

Constructibility of High-Strength Concrete at the 225 W. Wacker Project in Chicago
Jaime Moreno, Technical Marketing Manager, Material Service Corporation, Chicago, Illinois
OPEN PAPER SESSION

Sponsored by TAC

Session Chairman: Arturo E. Schultz
                    Assistant Professor
                    North Carolina State University
                    Raleigh, North Carolina

Session Co-Chairman: Roberto T. Leon
                     Assistant Professor
                     University of Minnesota
                     Minneapolis, Minnesota

Nondestructive Evaluation of Masonry Piers
Daniel P. Abrams, Associate Professor; Gary S. Epperson, Research Assistant, University of Illinois, Urbana, Illinois

Bond of Epoxy-Coated Reinforcing Steel to Concrete
David Darwin, Professor of Civil Engineering; Steven L. McCabe, Assistant Professor; Oan C. Choi, Graduate Research Assistant; Hossein Hadj-Djaffari, Graduate Research Assistant, Department of Civil Engineering, University of Kansas, Lawrence, Kansas

Construction Materials and Techniques in Ancient Egypt
Vladimir Novokshchenov, Senior Research Engineer, Construction Technology Laboratories, Inc., Skokie, Illinois

Lateral Stiffness of Slab-Column Frame
S.J. Hwang, Research Assistant; J.P. Moehle, Associate Professor, University of California, Berkeley, California

Post-Tensioned Concrete Using Unbonded Kevlar Tendons
Charles W. Dolan, Lecturer, Cornell University, Ithaca, New York

Cracks and Corrosion of Reinforcing Steel: A Comparison of Laboratory Results with Corrosion of Actual Concrete Structures
S. Somajari, Professor; B. Borgard; C. Warren; R. Heidersbach, Professor, California Polytechnic State University, San Luis Obispo, California

Loading Tests on Concrete Beams Prestressed with Glass Fiber Tendons
Luc R. Tarwe, Senior Assistant, State University of Ghent, Magnel Laboratory for Reinforced Concrete, Ghent, Belgium
USE AND APPLICATION OF VIDEO IN CONCRETE TECHNOLOGY
Sponsored by Committee E702

Session Chairman: Michael A. Cassaro
Professor of Civil Engineering
University of Louisville
Louisville, Kentucky

Video Tape in Education and Training
Roger E. Wilson, Manager, Education and Training, Portland Cement Association, Skokie, Illinois

Video Time - Lapse Applications
Robert S. Pocreva, Associate Professor of Construction, Southern Illinois University at Edwardsville, Edwardsville, Illinois

Video Applications in Research
Edward Hedstrom, North Carolina Masonry Association, Herndon, Virginia

Video Applications for Forensic Engineering Documentation

Video Production and Construction Practice
Ted Baldwin, Science and Engineering Instructional Television, Louisiana State University, Baton Rouge, Louisiana

Use of Video in Education for Concrete Practice
Michael A. Clark, American Concrete Institute, Detroit, Michigan
TECHNICAL SESSION

TUESDAY, February 21, 1989
7:30 PM - 10:00 PM
Room: Grand Salon D

FORUM: AN EVENING WITH THE CONCRETE GIANTS
Sponsored by Committee 123

Session Moderator: Robert L. Henry
Vice President, Engineering
Maxim Engineers, Inc.
Dallas, Texas

Panelists:
Edward A. Abdun-nur
Consultant
Denver, Colorado

Richard D. Gaynor
National Ready Mix Concrete Association
National Sand and Gravel Association
Silver Spring, Maryland

Paul Klieger
Consultant
Concrete and Concrete Materials
Skokie, Illinois

Bryant Mather
U.S. Army Corps of Engineers
Vicksburg, Mississippi

Robert E. Philleo
Consultant
Annandale, Virginia

Lewis H. Tuthill
Consultant
Sacramento, California

Eivind Hognestad
Principal Consultant
Construction Technology Laboratories, Inc.
Skokie, Illinois
TECHNICAL SESSION

WEDNESDAY, February 22, 1989
9:00 AM-12:00 NOON
Room: Grand Salon D

INELASTIC DESIGN OF EARTHQUAKE RESISTANT CONCRETE STRUCTURES
Sponsored by Committee 442

Session Chairman: S.K. Ghosh
Program Manager, Engineered Structures
Portland Cement Association
Skokie, Illinois

Introduction
An Overview
S.K. Ghosh, Program Manager, Engineered Structures, Portland Cement Association, Skokie, Illinois

Observations on the Behavior of Reinforced Concrete Buildings During Earthquakes
Jack P. Moehle; Stephan A. Mahin; Associate Professors of Civil Engineering, University of California at Berkeley, Berkeley, California

Experimentally Observed Inelastic Behavior of Structural Systems and Components
Daniel P. Abrams, Associate Professor, University of Illinois, Urbana, Illinois

Computation of Inelastic Response of Structures Subject to Earthquakes
Christian Meyer, Associate Professor of Civil Engineering, Columbia University, New York, New York

Inelastic Design Procedures for Reinforced Concrete Structures Subject to Earthquakes
Mark Fintel, Consulting Engineer, Boca Raton, Florida; S.K. Ghosh, Program Manager, Engineered Structures, Portland Cement Association, Skokie, Illinois

Inelastic Deformability of Reinforced Concrete Beams
Catherine W. French, Assistant Professor of Civil Engineering, University of Minnesota, Minneapolis, Minnesota; Arthur Schultz, North Carolina State University, Raleigh, North Carolina

Inelastic Deformability of Reinforced Concrete Columns and Structural Walls
Murat Saatioglu, Associate Professor, Department of Civil Engineering, University of Ottawa, Ottawa, Ontario, Canada; Sharon L. Wood, Assistant Professor, Department of Civil Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois
CEMENT GROUTING FOR HAZARDOUS WASTE

Sponsored by Committee 552

Session Chairman: Gary R. Mass
Director of Concrete Engineering
Concrete Technology Corporation
Santa Barbara, California

Waste Containment Grouts, Materials, Mixing and Testing

Grout Compatibility Studies for a Hazardous Waste Application
Kenneth D. Weaver, Grouting Specialist, Woodward-Clyde Consultants, Oakland, California; Jeffrey C. Evans, Bucknell University, Lewisburg, Pennsylvania; Stephan E. Pankoski

Applications of Geopolymeric Grouts in the Prevention of Environmental Contamination
Joseph Davovits, Professor and Director, Institute for Applied Archaeological Sciences, Barry University, Miami Shores, Florida and Geopolymer Institute, Saint Quentin, France; Douglas C. Comrie, President; John H. Paterson; Douglas J. Ritcey, Comrie Waste Management Construction Ltd., Mississauga, Ontario, Canada

Permeability of Grouted Fractures in Granite Rock
R.D. Hooton; L. Konecny; Engineers, Research Division, Ontario Hydro, Toronto, Ontario, Canada

Cyanide Dump - Bowling Green, Kentucky - Case Study
Bob Gronowicz, Argus Incorporated - Pressure Grouting Services, Warren, Michigan

Deep Soil Mixing - Bay City, Michigan - Case Study
Ken Faught, Geo-Con, San Jose, California
CREEP, SHRINKAGE, AND TEMPERATURE CHANGE AND THEIR EFFECTS ON CONCRETE STRUCTURES — COMPUTER ANALYSIS - PART I

Sponsored by Committee 209

Session Chairman: Domingo Carreira
Engineering Specialist
Sargent & Lundy Engineers
Chicago, Illinois

Session Co-Chairman: Zdeněk P. Bažant
Professor of Civil Engineering
Northwestern University
Evanston, Illinois

Long-Term Behavior of a Composite Prestressed Concrete Railway Bridge — Part I: Experiment
Jenn-Chuan Chern, Associate Professor; Young-Gee Wu, Graduate Research Assistant, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan, R.O.C.

Long-Term Behavior of Prestressed and Partially Prestressed Concrete Beams
Bernard Espion, Lecturer; Pierre Halleux, Professor, Department of Civil Engineering, University of Brussels, Brussels, Belgium

Creep, Buckling of Uniaxially Loaded Reinforced Concrete Columns
N.C. Mickleborough; R.I. Gilbert, Senior Lecturers, University of New South Wales, Kensington, Australia

Solidification Model for Concrete Creep and Its Application to Structures
Zdeněk P. Bažant, Professor of Civil Engineering, Northwestern University, Evanston, Illinois; Santosh Prasannan, Graduate Research Assistant, Design Engineer, Cohen, Baretto and Marchertas, Chicago, Illinois

Evaluation of Creep and Shrinkage Deflections of Reinforced Concrete Members in the Current Australian Practice
B. Vijaya Rangan, Associate Professor and Head, Department of Structural Engineering, University of New South Wales, Kensington, Australia

Creep Effects in Slender Reinforced and Prestressed Concrete Columns
R.I. Gilbert, Senior Lecturer, University of New South Wales, Kensington, Australia

NOTE: Part II of Creep, Shrinkage, and Temperature Change and their Effects on Concrete Structures — Computer Analysis will be held Wednesday, February 22, 1989, from 2:00 PM - 5:00 PM in Crystal Parlor F.
MATERIAL PROPERTIES AND APPLICATIONS — FIBER REINFORCED CONCRETE AND FERROCEMENT PRODUCTS - PART I

Sponsored by Committees 544 and 549

Session Co-Chairmen: S. P. Shah
Professor of Civil Engineering
Northwestern University
Evanston, Illinois

J. I. Daniel
Senior Engineer
Construction Technology Laboratories, Inc.
Skokie, Illinois

Deformation Characteristics of Ferrocement Elements under Tension
T. P. Tassios; V. Karamouli, Professors of Civil Engineering, National Technical University of Athens, Athens, Greece

Properties of New Carbon Fiber Reinforced Cement Product
Tatsuo Ando, Senior Research Scientist, Mitsubishi Kasei Corporation, Midori-ku, Yokohama, Japan; Hiromichi Sakai, Manager, Mitsubishi Kasei Corporation, Fukuoka-ken, Japan; Seiichi Oka, President, Tokushu Concrete Corporation, Hyogo-ken, Japan; Tokitaro Hoshijima, Manager, Mitsubishi Kasei Corporation, Tokyo, Japan;
Mitsuru Awata, Senior Research Scientist, Mitsubishi Kasei Corporation, Midori-ku, Yokohama, Japan; Keisuke Takahashi, Assistant Manager, Mitsubishi Kasei Corporation, Fukuoka-ken, Japan

Quantitative Damage Characterization in Polypropylene Fiber Reinforced Cement
Henrik Stang; S. P. Shah, Professors of Civil Engineering, Department of Structural Engineering, Technical University of Denmark, Lyngby, Denmark

Improvement of the Durability of GFRC by Silica Fume Treatments
A. Bentur, Professor of Civil Engineering, Department of Civil Engineering, Technion, Israel Institute of Technology, Haifa, Israel

Design of GFRC Facades

Manufacture and Installation of GFRC Facades
Norman W. Hanson, Principal Engineer, Structural Engineering Department; James I. Daniel; T. R. Overman, Senior Engineers; J. J. Roller, Engineer; T. L. Weinmann, Supervisor-Instrumentation Systems, Structural Development Section, Construction Technology Laboratories, Inc., Skokie, Illinois

NOTE: Part II of Material Properties and Applications — Fiber Reinforced Concrete and Ferrocement Products will be held Wednesday, February 22, 1989, from 2:00 PM - 5:00 PM in the Newton Room.
WEDNESDAY, February 22, 1989
9:00 AM-12:00 NOON
Room: Fulton

UNIQUE CONCRETE CONSTRUCTION IN
GEORGIA - PART I
Sponsored by ACI's Atlanta Chapter

Session Moderator: John Love
Assistant Vice President
Law Engineering
Atlanta, Georgia

Panelists:
Thomas Taylor
Partner
The Datum Moore Partnership
Dallas, Texas

Chris Gray
Project Manager
HCB Company
Atlanta, Georgia

Ralph Sieken
General Superintendent
HCB Company
Atlanta, Georgia

NOTE: Part II of Unique Concrete Construction in Georgia will be held Wednesday, February 22, 1989, from 2:00 PM - 5:00 PM in the Fulton Room.
TECHNICAL SESSION

WEDNESDAY, February 22, 1989
2:00 PM-5:00 PM
Room: Grand Salon D

DRIFT IN TALL BUILDINGS
Sponsored by Committees 442 and 441

Session Co-Chairmen: Finley A. Charney
J.R. Harris and Company
Denver, Colorado

Shamin A. Sheikh
Department of Civil and Environmental Engineering
University of Houston
Houston, Texas

Research Needs for Establishing Rational Drift Criteria
Finley A. Charney, J.R. Harris and Company, Denver, Colorado

Elastic and Inelastic Column and Wall Shortening in Tall R/C Buildings
Larry Griffis, Walter P. Moore and Associates, Houston, Texas

Damaging Distortions for Non-Structural Partitions
Bekir Algans, Austin, Texas

Influence of Strength and Stiffness on Seismic Drift of R/C Buildings
Juan Bariola, Catholic University of Peru, Lima, Peru

Methods for Estimating Seismic Drift Response of Reinforced Concrete Structures
John F. Bonacci, University of Toronto, Toronto, Ontario, Canada;
Sharon Wood, University of Illinois at Urbana, Urbana, Illinois

History of Columns in Frames
John Breen, University of Texas at Austin, Austin, Texas

Second Order Effects
James MacGregor, University of Alberta, Edmonton, Alberta, Canada

Design Provisions for Reinforced Concrete Columns, A Wish List
Roger Green, University of Waterloo, Waterloo, Ontario, Canada
CREEP, SHRINKAGE, AND TEMPERATURE CHANGE AND THEIR EFFECTS ON CONCRETE STRUCTURES — COMPUTER ANALYSIS - PART II

Sponsored by Committee 209

Session Chairman: Bernard L. Myers
Vice President and Manager of Engineering
Bechtel Power Corporation
Gaithersburg, Maryland

Session Co-Chairman: Brij Goyal
Bechtel Power Corporation
Gaithersburg, Maryland

Time-Dependent Redistribution of Stresses in Segmentally Erected Prestressed Concrete Bridges
Mark A. Ketchum, Senior Engineer, Wiss, Janney, Elstner Associates, Inc., Emeryville, California; Alex C. Scordelis, Nishkian Professor of Structural Engineering, University of California at Berkeley, Berkeley, California

Time-Dependent Deflections of Prestressed Members: Rational and Approximate Methods
Alex Aswad, Associate Professor, Penn State University at Harrisburg, Middletown, Pennsylvania

A Four-Year Study of the Creep and Shrinkage of 100 MPa Field Concrete
Pierre Laplante; Pierre-Claude Aitcin, University of Sherbrooke, Sherbrooke, Quebec, Canada

Long-Term Behavior of a Composite Prestressed Concrete Railway - Part II: Constitutive Law and Analysis
Jenn-Chuan Chern, Associate Professor; Yin-Wen Chan, Graduate Research Assistant; Young-Gee Wu, Graduate Research Assistant, National Taiwan University, Department of Civil Engineering, Taipei, Taiwan, Republic of China

Effect of Creep and Shrinkage on Prestressed Nuclear Reactor Containment Building Design
Bernard L. Meyers, Vice President; Marwin A. Daye; Engineering Specialist, Bechtel Power Corporation, Gaithersburg, Maryland

A Step-by-Step Integration Procedure for Computing State of Stress in Prestressed Concrete Pipe
Mehdi S. Zarghamee; Frank J. Heger, Senior Principal, Simpson, Gumpertz and Heger Inc., Arlington, Massachusetts; William R. Dana, Senior Vice President, Technology, Ameron, Monterey Park, California

Time-Dependent Analysis of Partially Prestressed Composite Members
Yun-Sool Joo, Doctoral Candidate; Maher K. Tadros, Professor, Department of Civil Engineering, University of Nebraska-Lincoln, Omaha, Nebraska
UNIQUE CONCRETE CONSTRUCTION IN GEORGIA — BRIDGES, PAVEMENTS, HIGH STRENGTH - PART II

Sponsored by ACI's Atlanta Chapter

Session Chairman: Robert H. Kuhlman
Consulting Engineer
Atlanta, Georgia

Introduction
Concrete in Transportation, Patterned Concrete, High-Strength Concrete
Robert H. Kuhlman, Consulting Engineer, Atlanta, Georgia

Development of Post-Tensioned Concrete Hollow Box Girder Bridges in Georgia
Charles Lewis, Director of Pre-Construction, Georgia Department of Transportation, Atlanta, Georgia

Design of the Cable-Stayed Concrete Talmadge Bridge, Savannah, Georgia
Man-Chung Tang, President, DRC Consultants, Flushing, New York

Upgrading Older Concrete Pavements in Georgia Through CPR and Lane Addition
Wouter Gulden, Concrete Pavement Rehabilitation Coordinator, Georgia Department of Transportation, Atlanta, Georgia

Democratic Concrete
Eugene H. Boeke, Vice President, Beers, Inc., Atlanta, Georgia

Development of In-Place Strength of High-Strength Concrete
John R. Love, Senior Materials Engineer; Robert S. Jenkins, Corporate Consultant, Law Engineering, Atlanta, Georgia
MATERIAL PROPERTIES AND APPLICATIONS - FIBER REINFORCED CONCRETE AND FERROCEMENT PRODUCTS - PART II

Sponsored by Committees 544 and 549

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

J.I. Daniel
Senior Engineer
Construction Technology Laboratories, Inc.
Skokie, Illinois

Fracture Behavior of Cementitious Materials with Randomly Oriented Short Steel Fibers
J. Misi; L. Robles-Austriaco; R.P. Pama; Professors of Civil Engineering, Asian Institute of Technology, Bangkok, Thailand

Development of Kevlar Fiber Reinforced Cement Composites
Parviz Soroshian, Assistant Professor, Civil Engineering Department, Michigan State University, East Lansing, Michigan; Ziad Bayasi, Assistant Professor, Department of Civil Engineering and Construction, Bradley University, Peoria, Illinois

Tensile and Flexural Behavior of Thin Fiber Reinforced and Ferrocement Sheets
R.N. Swamy; N.W. Hussin; Professors of Mechanical Engineering, Department of Mechanical Engineering, The University of Sheffield, Sheffield, England

Performance of Non-Asbestos Fiber Cement Sheeting
J.G. Keer, Senior Lecturer, Department of Civil Engineering, University of Surrey, Guildford, England

Advances in the Development of Specialty Cellulose Fibers Specifically Designed for the Reinforcement of Cement Matrices

Properties of Composite Beams with Thin Sections of Steel Fiber Reinforced Mortar
M. Rahimi; H.T. Cao; National Building Technology Center Laboratory, CSIRO, North Ryde N.S.W., Australia
ACCELERATED CURING OF CAST-IN-PLACE CONCRETE
Sponsored by Committee 517

Session Chairman: W. Calvin McCall
Manager, Technical Services
Gifford-Hill Cement Company of
South Carolina
Charlotte, North Carolina

Introduction
Need for Early Strengths
W. Calvin McCall, Manager, Technical Services, Gifford-Hill Cement Company of South Carolina, Charlotte, North Carolina

Evaluating Accelerated Curing Techniques
Luke M. Snell, Professor and Chairman of Construction, School of Engineering; Jacob Van Roekel, Assistant Professor of Industrial Engineering, Department of Industrial Engineering; Norval D. Wallace, Dean of Engineering, School of Engineering, Southern Illinois University at Edwardsville, Edwardsville, Illinois

Promotion and Design of High-Early-Strength Concrete
Earl H. Colburn, Technical Director, Novi, Michigan

Accelerated Cast-in-Place Concrete from a Contractor's Point of View
H.E. Bud Prince, Vice President of Project Management, R.E. Dailey and Company, Southfield, Michigan

Testing Concrete for Early Strength
John Bickley, President, John A. Bickley and Company, Toronto, Ontario, Canada

Non-Corrosive Accelerated Admixtures
Ken Rear, Senior Technical Services Specialist, W.R. Grace & Company, Cambridge, Massachusetts

Accelerated Curing for Till-Up Wall Panels
Robert P. Foley, President, Con/Steel Design Systems, Dayton, Ohio
AWARDS BREAKFAST

THURSDAY, February 23, 1989
8:00 AM-10:00 AM

AWARDS BREAKFAST
Cost: $13.50

Come meet the awardees. Have fun and enjoy a good breakfast. Please purchase tickets before Wednesday at 4:00 PM.

AWARDS

Honorary Membership
T.Z. Chastain, Robert G. Lee, Stewart C. Watson, Robert E. Wilde

Arthur R. Anderson Award
Surendra P. Shah

Roger H. Corbetta Concrete Constructor Award
Norwegian Contractors

Joe W. Kelly Award
Ronald H. Hall

Henry L. Kennedy Award
Thomas J. Pasko, Jr.

Alfred E. Lindau Award
Jacob S. Grossman

Henry C. Turner Medal
W. Gene Corley

Charles S. Whitney Medal
Structural Research Laboratories, Department of Civil Engineering,
University of Toronto

Wason Medal for Materials Research
Val R. Sturup, R. Douglas Hooton, Pranab K. Mukherjee, T. Carmichael

Wason Medal for Most Meritorious Paper
Robert F. Ytterberg

ACI Construction Practice Award
Ernest K. Schrader

Raymond C. Reese Structural Research Award
M. J. N. Priestley, Robert Park

Maurice P. van Buren Structural Engineering Award
Mohammad Abul Mansur, P. Paramasivam, Seng-Lip Lee

Chapter Activities Award
I. Leon Glassgold

Delmar L. Bloem Awards for Distinguished Service
Richard O. Albright, John E. Breen, David P. Gustafson, Gary R. Mass

Arthur J. Boase Award (Reinforced Concrete Research Council)
Boris Bresler

Concrete Bridge Awards (Portland Cement Association)
Ocean County Plaza Bridge, New Jersey
Northwest Lightrail Rapid Transit Bow River Bridge, Canada
1-65/1-285 Interchange, Georgia
Linn Cove Viaduct, North Carolina
Tampico Bridge, Mexico
Ingham Street Bridge, California

Chapter Awards - Citations of Excellence
1988 Fellows
GENERAL SESSION

THURSDAY, February 23, 1989
10:00 AM

Room: Grand Salon D, E

GENERAL SESSION

Session Chairman: T.Z. Chastain
President
Chastain Forensics Corporation
Tucker, Georgia

Welcome to Atlanta
T.Z. Chastain, President, Chastain Forensics Corporation, Tucker, Georgia

Certificates of Appreciation for the 1989 Annual Convention

Introduction of International Visitors
Recognition of Chapter Officers Present
Recognition of Past Presidents Present
Recognition of Retiring Board of Direction, Technical Activities Committee, and Educational Activities Committee Members

Presidential Address:
“From Walnut Lane to 318”
W. Burr Bennett, Jr., President, W. Burr Bennett, Ltd., Northbrook, Illinois

Tellers Report
Presentation of memento to retiring president

Keynote Address:

“Ideas - Not Cast In Concrete”

Lawrence L. Gellerstedt, Jr., is Chairman of the Board, Beers, Inc., a general contracting firm in Atlanta. He is the National Director of the Associated General Contractors of America and is active with a variety of civic affairs, university boards and foundations.

Closing Remarks

STANDARDS PRESENTATION

THURSDAY, February 23, 1989
Following General Session

Room: Grand Salon D, E

STANDARDS PRESENTATION

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

Proposed ACI Standards:
Revisions to Specifications for Structural Concrete for Buildings (ACI 301-84) (Revised 1988)
Revisions to Building Code Requirements for Reinforced Concrete (ACI 318-83) (Revised 1986)

NOTE: ACI 117 was presented on Tuesday, February 21, 1989. Specifications for Tolerances for Concrete Construction and Materials (by Committee 117)
THURSDAY, February 23, 1989
2:00 PM-5:00 PM
Room: Club, State

USE OF COMPUTERS - PART I
Sponsored by Committee 118

Session Chairman: Lawrence J. Kaetzel
Computer Specialist
National Institute of Standards and
Technology
Gaithersburg, Maryland

Introduction
Meeting Future Computer Needs of Concrete Technologists
Lawrence J. Kaetzel, Computer Specialist, National Institute of
Standards and Technology, Gaithersburg, Maryland

KEYNOTE: The Engineer's Role in Expert Systems Applications
Frank Kearney, Team Leader, U.S. Army Civil Engineering Laboratory,
Champaign, Illinois

Expert Systems Application to Concrete Mix Design
Saeed Yousuf, Structural Engineer, Polyengineering, Inc., Dothan,
Alabama

Application of Artificial Intelligence Approach to Reinforced Concrete
Design
Mosallam D. Kassem, Assistant Professor, Department of Civil
Engineering, College of Technological Studies, Rumaitihyah, Kuwait

Selecting the Optimum Release Agent
George Baty, President, Cresset Chemical Company, Weston, Ohio;
Dave Polin

An Integrated Knowledge System for the Characterization of Cracks in
Concrete
James R. Clifton, Leader, Inorganic Materials Group; Lawrence J.
Kaetzel, Computer Specialist, National Institute of Standards and
Technology, Gaithersburg, Maryland

NOTE: Part II of Use of Computers will be held on
Friday, February 24, 1989, from 9:00 AM - 12:00
NOON in the Club, State.
THURSDAY, February 23, 1989
2:00 PM-5:00 PM
Room: Douglas

COLUMN AND FRAME DESIGN
Sponsored by Committee 441

Session Chairman: R.W. Furlong
Professor
Department of Civil Engineering
University of Texas at Austin
Austin, Texas

S. Sheikh
Associate Professor
Department of Civil Engineering
University of Houston
Houston, Texas

Rigidity of Simple Slender Reinforced Concrete Beam Columns
F.M. Bartlett, Buckland and Taylor Ltd., British Columbia, Canada;
N.D. Nathan, Department of Civil Engineering, University of British
Columbia, British Columbia, Canada

Biaxially Loaded L-Channel and T-Sections
T. Hsu, Professor, Department of Civil and Environmental Engineering,
New Jersey Institute of Technology, Newark, New Jersey

Analysis and Test of U-Braced Concrete Frames
R.W. Furlong, Professor, Department of Civil Engineering, University
of Texas at Austin, Austin, Texas

Columns for Seismic and Non-Seismic Conditions
S. Sheikh, Associate Professor, Department of Civil Engineering,
University of Houston, Houston, Texas

Experimental Investigation of Deformation Components in Reinforced
Concrete Columns
Murat Saaclioglu, Associate Professor, Department of Civil Engineering,
University of Ottawa, Ottawa, Ontario, Canada

Lateral Deflection of Slender Columns Under Sustained Loads
B. Vijaya Rangan, Associate Professor and Head, Department of
Structural Engineering, University of New South Wales, Kensington,
Australia

Tests on Large Scale Columns
H.S. Lew, National Institute of Standards and Technology, Gaithersburg,
Maryland
RESEARCH NEEDS
Sponsored by RCRC

Session Chairman: Edward Cohen
Managing Partner
Ammann and Whitney Engineers
New York, New York

Introduction
Edward Cohen, Managing Partner, Ammann and Whitney Engineers,
New York, New York

RCRC - The Past
Chester P. Siess, Professor Emeritus, University of Illinois, Urbana,
Illinois

RCRC - The Present
Sharon L. Wood, Assistant Professor, University of Illinois, Urbana,
Illinois

RCRC - Is There a Future for Reinforced Concrete Research?
John M. Hanson, President, Wiss, Janney, Elstner Associates, North-
brook, Illinois

Innovative Funding for Research in the Construction Industry
Richard Tucker, Director, Construction Industry Institute, The Uni-
versity of Texas at Austin, Austin, Texas

Research Needs for Buildings
John E. Breen, Nasser I. Al-Rashid Chair in Civil Engineering, The
University of Texas at Austin, Austin, Texas

OPEN DISCUSSION ON RESEARCH NEEDS FOR BUILDINGS

Research Needs for Transportation Structures
James E. Roberts, Chief, Division of Structures, California Department
of Transportation, Sacramento, California

OPEN DISCUSSION ON RESEARCH NEEDS FOR TRANSPORTATION
STRUCTURES

Research Needs for Special Structures
George C. Hoff, Senior Associate Engineer, Mobil Research and
Development Corporation, Dallas, Texas

OPEN DISCUSSION ON RESEARCH NEEDS FOR SPECIAL
STRUCTURES

RCRC - A Longer Range Look
Roger H. Wildt, Construction Marketing Manager, Bethlehem Steel
Corporation, Bethlehem, Pennsylvania
THURSDAY, February 23, 1989
2:00 PM-5:00 PM

ROOM: Grand Salon A

AUTOMATION IN CONCRETE CONSTRUCTION
Sponsored by TAC

Session Chairman: H.S. Lew
Leader/Structural Evaluation Group
National Institute of Standards and Technology
Gaithersburg, Maryland

Need for Automation in Concrete Construction in the U.S.
Dean E. Stephan, Executive Vice President, Charles Pankow Builders, Ltd., Altadena, California

Current State and Future Directions of Automation in Concrete Construction in Japan
Toshiaki Fujimori, Executive Director, Shimizu Technology Center America, Cambridge, Massachusetts

U.S. Experience in Automation in Concrete Construction - Case Histories with Economic Implications
Miroslaw Skibniewski, Associate Professor, Division of Construction Engineering and Management, Department of Civil Engineering, Purdue University, West Lafayette, Indiana

What U.S. Can Learn from Japanese Experience and Direction of Future U.S. R&D Effort
Richard L. Tucker, Director and Professor, Construction Industry Institute, University of Texas at Austin, Austin, Texas
FRIDAY, February 24, 1989
9:00 AM-12:00 NOON

USE OF COMPUTERS - PART II
Sponsored by Committee 118

Session Chairman: Lawrence J. Kaetzal
Computer Specialist
National Institute of Standards and Technology
Gaithersburg, Maryland

Introduction
Meeting Future Computer Needs of Concrete Technologists
Lawrence J. Kaetzal, Computer Specialist, National Institute of Standards and Technology, Gaithersburg, Maryland

Advanced Building Technology (ABT) Matrix
Photos Ioannou, Assistant Professor, University of Michigan, Ann Arbor, Michigan

Study of the Ductility of Partially Prestressed Beams by Microcomputers
Kumar Yamani, Research Assistant; Apostolos Fafitis, Assistant Professor, Department of Civil Engineering, Arizona State University, Tempe, Arizona

Software Evaluation
Kenneth M. Will, Assistant Professor, Georgia Institute of Technology, Atlanta, Georgia

Computer Simulation of Particle Size Distribution Effects on Cement Microstructure
Leslie J. Struble, Materials Research Engineer, National Institute of Standards and Technology, Gaithersburg, Maryland

Cement-Based Composite Testing and Automated Data Acquisition System
Antonio Nanni, Assistant Professor, Penn State University, University Park, Pennsylvania; Otis M. Isa, Practicing Engineer, Metric Engineering, West Palm Beach, Florida
FRIDAY, February 24, 1989
9:00 AM-12:00 NOON  Room: Douglas

ECONOMICS OF CONCRETE SHELL STRUCTURES
Sponsored by Committee 334

Session Chairman: Jack Christiansen
Principal
Jack Christiansen, P.E.
Seattle, Washington

Introduction:
Jack Christiansen, Principal, Jack Christiansen, P.E., Seattle, Washington

Brown University Builds an Economical Long Span Multifunctional Shell Roof
Daniel F. Tully, President, Daniel F. Tully Associates, Inc., Melrose, Massachusetts

The Emmett, Idaho, High School
David B. South, President, Monolithic Constructors, Inc., Idaho Falls, Idaho

Concrete Domes for Water and Waste Water Tanks
Frank J. Heger, Senior Principal, Simpson Gumpertz & Heger, Inc., Arlington, Massachusetts

Economics of Shell Structures
John K. Parsons, Owner, John K. Parsons & Associates, Phoenix, Arizona

The Economics of Three Hyperbolic Paraboloid Concrete Shell Roofs
Jack Christiansen, Principal, Jack Christiansen, P.E., Seattle, Washington
USES AND APPLICATIONS OF LATEX MODIFIED HYDRAULIC CEMENT MORTARS

Sponsored by Committee 548

Session Chairman: Joseph A. Lavelle
Research Section Manager
Rohm and Haas Company
Spring House, Pennsylvania

A Test Method for Measuring the Tensile Bond Strength of Concrete
Louis A. Kuhlmann, Technical Manager, Design Latex, Dow Chemical Company, Midland, Michigan

Self-Smoothing Floors Based on Polymer-Cement Concrete
Johan Alexanderson, STRA Development AB, Djursholm, Sweden

Properties of Polymer-Modified Mortar Using Styrene-Butyl Acrylate Emulsions with Various Monomer Ratios
Yoshihiko Ohama, Professor; Katsunori Demura, Lecturer; Masaru Kakegawa, Graduate Student, Nihon University, Koriyama, Fukushima, Japan; Masami Hamatsu, Research Engineer, Hoechst Gosei Company, Ltd., Tokyo, Japan

A Comparison of Latex-Modified Portland Cement Mortars
D. Gerry Walters, Manager, Building Products and Adhesives, Rechhold Chemicals, Inc., Dover, Delaware

Latex-Modified Cement Mortar Used for Lightweight Insulating Composites
Jack J. Fontana, Process Sciences Division, Walter Reams, Process Sciences Division, Brookhaven National Laboratory, Upton, New York
TECHNICAL ACTIVITIES COMMITTEE

DEAN E. STEPHAN, Chairman
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RAMON F. GUTIERREZ
FREDERICK L. MOREADITH
PETER G. SNOW
WILLIAM J. WILHELM
ACI FUTURE CONVENTIONS

1989 Fall Convention
October 29 - November 3
San Diego Marriott Hotel and Marina
San Diego, California

1990 Annual Convention
March 18-23
Royal York Hotel
Toronto, Ontario, Canada

1990 Fall Convention
November 11-16
Wyndham Franklin Plaza Hotel
Philadelphia, Pennsylvania