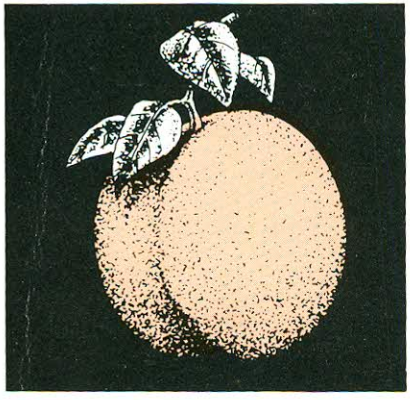
Convention Theme:

Concrete Constructibility



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

AMERICAN CONCRETE INSTITUTE

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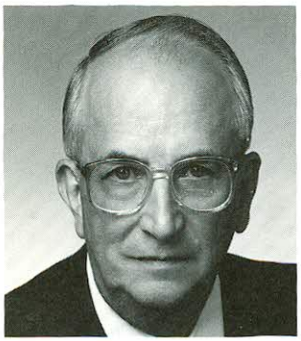
ACI ANNUAL CONVENTION
February 19-24, 1989
The Atlanta Hilton and Towers
Atlanta, Georgia

Convention Theme:
Concrete Constructibility

TELEPHONE: 313-532-2600
TELEX: 810 2211454

american concrete institute

BOX 19150
22400 WEST SEVEN MILE ROAD
DETROIT, MICHIGAN 48219-0150



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

CITY OF ATLANTA

ANDREW YOUNG
MAYOR

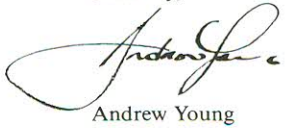
Dear Convention Delegates:

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

STATE OF GEORGIA

OFFICE OF THE GOVERNOR

ATLANTA 30334

Joe Frank Harris
GOVERNOR

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

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LaGrit F. "Sam" Morris
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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

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Planning and Parking Consultant

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Vice General Chairmen
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LaGrit F. "Sam" Morris
Georgia Concrete and Products Association

Technical Program
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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 **Grand Salon A, B, C**
8:00 AM-10:00 PM 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	Dekalb
318 Steering Committee Breakfast	7:00 AM-8:30 AM
Tuesday, February 21, 1989	Grand Salon E
New Chairmen Breakfast	7:00 AM-8:30 AM
Thursday, February 23, 1989	Crystal Parlor E
San Diego Session Chairmen Breakfast	7:00 AM-8:30 AM

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	Student	Blue
Nonmember	Peach	Spouse	Beige
Fellow	White		

DAILY EVENTS

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

SATURDAY/SUNDAY

DAY/TIME	FUNCTION	ROOM
SATURDAY, February 18, 1989		
8:00 AM-6:00 PM		
TAC	Technical Activities Committee (Mtg. 1)	Milan
SUNDAY, February 19, 1989		
8:00 AM-6:00 PM		
TAC	Review Group 1	Milan
TAC	Review Group 2	Thomas Jefferson
TAC	Review Group 3	George Washington
TAC	Review Group 4	John Adams
9:00 AM-5:00 PM		
EAC	Educational Activities Committee (Mtg. 1)	Gwinnett
1:00 PM-5:00 PM		
	Registration	Grand Salon Foyer
2:00 PM-5:00 PM		
	Planning Committee	Forsythe
2:00 PM-6:30 PM		
349-2	Design (Mtg. 1)	Board
349-3	Embedded Steel (Mtg. 1)	Directors
3:30 PM-5:00 PM		
RCRC	Reinforced Concrete Research Council	Douglas
5:30 PM-7:00 PM		
	Opening Reception (Sponsored by ACI's Atlanta Chapter)	**Grand Ballroom C,D**

DAY/TIME	FUNCTION	ROOM
MONDAY, February 20, 1989		
7:00 AM-1:00 PM		
313	Concrete Bins and Silos (Mtg. 1)	Crystal Parlor F
7:30 AM-5:00 PM		
	Registration	Grand Salon Foyer
8:00 AM-10:00 AM		
E902	Certification (Mtg. 1)	Grand Salon D
8:00 AM-1:00 PM		
TAC	Technical Activities Committee (Mtg. 2)	Milan
8:30 AM-10:00 AM		
TCRC	Construction Review Committee	George Washington
E702	Designing Structures	Douglas
118-UG	Concrete Computer User Group	Henry
120	History of Concrete	Rockdale
207	Mass Concrete	Forsythe
308	Curing Concrete	Cabinet
446-1	Sub 1	Club
446-4	Sub 4	State
8:30 AM-11:30 AM		
E801	Student Concrete Projects	Dusseldorf
117	Tolerances	Gwinnett
325-E	RCC Pavements	Cherokee
351-3	Foundation of Static Equipment	John Adams
8:30 AM-1:00 PM		
229	Controlled Low-Strength Materials	Crystal Parlor E
349-1	General Materials Construction	Board
349-2	Design (Mtg. 2)	Directors
349-3	Embedded Steel (Mtg. 2)	Thomas Jefferson
530-TG	Modulus of Elasticity	Council
543	Concrete Piles (Mtg. 1)	Crystal Parlor A
9:00 AM-5:00 PM		
125	Lunar Concrete	Embassy
10:00 AM-11:30 AM		
CLC	Construction Liaison Committee	George Washington
446-2	Sub 2	Club
446-3	Sub 3	State
553	Swimming Pools	Room 436
10:00 AM-1:00 PM		
E902-A	Field Technician I	Douglas
E902-Z	Training Courses	Cobb
118	Use of Computers	Henry
210	Erosion in Hydraulic Structures	Cabinet
211-D	High Strength	Forsythe
211-E	Evaluation	Rockdale
214	Strength Tests	Lisbon
318	Standard Building Code (Mtg. 1)	Grand Salon B

DAILY EVENTS

DAY/TIME	FUNCTION	ROOM
MONDAY, February 20, 1989		
11:30 AM-1:00 PM		
E902-F	Formwork Designer	George Washington
325-TG	316R-82 Revision	Cherokee
336	Footings (Mtg. 1)	Room 438
545	Concrete Railroad Ties	Club
1:00 PM-5:30 PM	**EDUCATIONAL SEMINAR:** Educator/Student Program and Seminar (E801)	Grand Ballroom A
2:00 PM-3:30 PM		
325	Concrete Pavements	Cherokee
437	Strength of Structures	Rockdale
543	Concrete Pipes (Mtg. 2)	Crystal Parlor A
554	Bearing Systems	Board
2:00 PM-5:00 PM		
E701	Construction Materials	Douglas
E703	Construction Practices	George Washington
E901	Scholarships	Room 436
E902-B	Lab Technician	Thomas Jefferson
E902-G	Shotcrete Nozzlemen	Newton
116	Terminology and Notation	Forsythe
201	Durability of Concrete	Grand Salon B
347	Formwork for Concrete	Cabinet
349	Nuclear Structures	Henry
351-4	Grouting of Equip./Mach.	Club
446	Fracture Mechanics	Fulton
530-TG	Veneers and Connectors	Council
533	Precast Panels	State
548-A	Polymer PC Concrete	Gwinnett
2:00 PM-5:00 PM	**TECHNICAL SESSION:** Research in Progress (123)	Grand Salon A
2:00 PM-6:30 PM		
E902-C	Concrete Inspector - General	John Adams
302	Construction of Floors	Dusseldorf
313	Concrete Bins and Silos (Mtg. 2)	Crystal Parlor F
318-B	Reinforcement and Development	Grand Salon D
318-C	Serviceability/Safety	Clayton
318-D	Flexure and Axial Loads	Lisbon
318-F	Two-Way Slabs	Milan
344	Editorial Subcommittee	Room 452
2:00 PM-7:00 PM		
336	Footings (Mtg. 2)	Room 438
3:30 PM-5:00 PM		
IAC	International Activities Committee	Rockdale
RC	Responsibility in Concrete Construction	Crystal Parlor A
213-A	High Strength	Paulding
3:30 PM-6:30 PM		
E902-D	Concrete Craftsman	Cobb
211-B	Lightweight	Board
441	Reinforced Concrete Columns	Directors
515	Coatings for Concrete	Dekalb
546-1	Underwater Repair	Cherokee
6:00 PM-9:00 PM		
552	Cement Grouting (Mtg. 1)	State

DAY/TIME	FUNCTION	ROOM

TUESDAY, February 21, 1989

8:00 AM-5:00 PM

	Registration	Grand Salon Foyer

8:00 AM-11:00 AM

307	CIP Concrete Chimneys	Directors

8:30 AM-10:00 AM

E705	Ed. Computer Act.	Thomas Jefferson
213-B	Lightweight Conc. Parking Struct. & Bridges	Council
504	Joint Sealants	Rockdale
544-1	Steel Fibers	Crystal Parlor A
544-2	Glass Fibers	Crystal Parlor E

8:30 AM-11:30 AM

	Publications Committee	George Washington
124	Concrete Esthetics	Forsythe
230	Soil Cement	Board
362	Parking Structures	Henry
363	High Strength	Cherokee
548-B	PC Overlays	Gwinnett

8:30 AM-1:00 PM

E902	Certification (Mtg. 2)	Grand Salon B
313	Concrete Bins and Silos (Mtg. 3)	State
318-A	General Concrete and Construction	Clayton
318-E	Shear and Torsion	Milan
318-G	Prestressed Precast	Grand Salon D
318-H	Seismic Provisions	Lisbon
344	Seismic Subcommittee	Room 436
445	Shear and Torsion	Cobb
503	Adhesives (Mtg. 1)	Fulton
506	Shotcreting	Crystal Parlor C

8:30 AM-6:30 PM

530	Masonry Structures	Cabinet

9:00 AM-10:30 AM

E903	Convention Training	Douglas

9:00 AM-12:00 NOON

366	Precast Concrete Pipelines	Room 438
408	Bond/Development of Reinforcement	Dekalb

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

	Forum: International Concrete Construction (IAC)	Grand Salon A
	Computer Programs Related to Evaluation of the ACI Standard 214 (214)	Newton
★	Constructibility of Bridges (343/345)	Grand Salon C
★	Constructibility of Environmental Engineering Concrete Structures (350)	Crystal Parlor B

DAILY EVENTS

DAILY EVENTS

DAY/TIME	FUNCTION	ROOM
TUESDAY, February 21, 1989		
9:00 AM-6:00 PM		
	Board of Direction	Crystal Parlor F,G
10:00 AM-11:30 AM		
523	Insulating and Cellular	Embassy
544-3	Synthetic Fibers	Crystal Parlor A
544-4	Vegetable Fibers	Crystal Parlor E
10:00 AM-1:00 PM		
211-C	No Slump	Thomas Jefferson
11:30 AM-1:00 PM		
367	Precast Concrete Chimneys	Directors
544-5	Structural Design	Crystal Parlor A
544-6	State-of-the-Art	Crystal Parlor E
549	Ferrocement	Board
12:00 NOON-2:00 PM		
	Contractors' Day Luncheon $18.00/person	**Grand Ballroom A**
1:30 PM-3:30 PM		
215	Fatigue of Concrete	Rockdale
2:00 PM-3:30 PM		
213	Lightweight Aggregates	Henry
227	Radioactive/Hazardous Management	Cobb
351	Equipment Foundations	Dekalb
444	Models of Concrete Structures	Directors
503	Adhesives (Mtg. 2)	Fulton
555	Removal and Reuse of Concrete	State
2:00 PM-5:00 PM		
	Membership Committee	George Washington
212	Chemical Admixtures	Grand Salon E
309	Consolidation of Concrete	Gwinnett
350	Environmental Structures	Clayton
358	Concrete Guideways	Room 436
442-SC	Inelastic Design	Embassy
546	Repair of Concrete	Grand Salon D
552	Cement Grouting (Mtg. 2)	Board

DAY/TIME	FUNCTION	ROOM

TUESDAY, February 21, 1989

2:00 PM-5:00 PM TECHNICAL SESSIONS AND EDUCATIONAL SEMINAR:

	Open Paper Session (TAC)	Newton
★★	Human Errors in Concrete Structures (348)	Grand Ballroom D
★	Specification Tolerances for Concrete Construction (117) (This session will also include 117's presentation before the Standards Board.)	Grand Ballroom C
★★	High-Strength Concrete (363)	Lisbon
★	Forum: Concrete Constructibility (CLC)	Grand Salon A
	Use and Application of Video in Concrete Technology (E702)	Grand Ballroom B

2:00 PM-5:30 PM

EAC	Educational Activities Committee (Mtg. 2)	Douglas

2:00 PM-6:30 PM

318	Standard Building Code (Mtg. 2)	Grand Salon B
340	Design Aids	Forsythe
344	Circular Prestressed Structures	Council
360	Design of Slabs on Grade	Milan
544	Fiber Reinforced Concrete	Grand Salon C

3:30 PM-5:00 PM

209	Creep and Shrinkage in Concrete	Henry
222	Corrosion	Cherokee

3:30 PM-6:30 PM

211-A	Edit and Coordination	Rockdale

4:30 PM-6:30 PM

	4:30 Rehabilitation (Cash Bar)	**Grand Ballroom Foyer**

5:00 PM-6:30 PM

216	Fire Resistance of Structures	George Washington
330	Parking Lots	Embassy

7:30 PM-10:00 PM TECHNICAL SESSION:

	Forum: An Evening with the Concrete Giants (123)	Grand Salon D

DAILY EVENTS

DAILY EVENTS

DAY/TIME	FUNCTION	ROOM
WEDNESDAY, February 22, 1989		
8:00 AM-5:00 PM		
	Registration	Grand Salon Foyer
8:30 AM-10:00 AM		
121-TG	Owners/Designers	Douglas
223	Expansive Cement	Forsythe
233	Ground Slag in Concrete	Gwinnett
343	Concrete Bridge Design	Cherokee
8:30 AM-11:30 AM		
122	Energy Conservation	Rockdale
311	Inspection of Concrete	Milan
318	Standard Building Code (Mtg. 3)	Grand Salon B
531	Concrete Masonry	Cabinet
548-D	Sulfur Concrete	Room 438
8:30 AM-1:00 PM		
305	Hot Weather Concreting	Dusseldorf
524	Plastering (Mtg. 1)	Board
8:30 AM-6:30 PM		
551	Tilt-Up Concrete Construction	Embassy
9:00 AM-12:00 NOON		
228	Nondestructive Testing	George Washington
9:00 AM-12:00 NOON	**TECHNICAL SESSIONS:**	
	★ Unique Concrete Construction in Georgia - Part I (ACI's Atlanta Chapter)	Fulton
	Material Properties and Applications - Fiber Reinforced Concrete and Ferrocement Products - Part I (544/549)	Newton
	Creep, Shrinkage, and Temperature Change and Their Effects on Concrete Structures — Computer Analysis - Part I (209)	Crystal Parlor F
	Cement Grouting for Hazardous Waste (552)	Crystal Parlor G
	Inelastic Design of Concrete Structures (442)	Grand Salon D
9:00 AM-5:00 PM		
355	Anchorage to Concrete	Directors
10:00 AM-11:30 AM		
JBRC	Int'l. Joints and Bearings Research Council	Council
343/348	Task Committee on LRFD	Cherokee
10:00 AM-1:00 PM		
	Convention Committee	Lisbon
11:30 AM-1:00 PM		
121-TG	Construction Suppliers	Douglas
348	Structural Safety	Cherokee

★ Denotes Theme Session: Concrete Constructibility

DAY/TIME	FUNCTION	ROOM

WEDNESDAY, February 22, 1989

1:00 PM-5:00 PM

TSC	Specifications Committee	Council

2:00 PM-3:30 PM

121-TG	Inspection Testing Agency	Douglas
364	Rehabilitation	Cherokee
524	Plastering (Mtg. 2)	Board

2:00 PM-5:00 PM

CAC	Chapter Activities Committee	Rockdale
CMRC	Concrete Materials Research Council	Grand Salon C
234	Silica Fume in Concrete	Paulding
303	CIP Architectural	Cabinet
345	Bridge Construction	George Washington
423	Prestressed Concrete	Grand Salon A
435	Deflection	Club
439	Steel Reinforcement	Gwinnett

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

	Drift in Tall Buildings (442/441)	Grand Salon D
	Creep, Shrinkage, and Temperature Change and Their Effects on Concrete Structures — Computer Analysis - Part II (209)	Crystal Parlor F
★	Unique Concrete Construction in Georgia — Bridges, Pavements, High Strength - Part II (ACI's Atlanta Chapter)	Fulton
	Material Properties and Applications - Fiber Reinforced Concrete and Ferrocement Products - Part II (544/549)	Newton
	Accelerated Curing of Concrete (517)	Clayton

2:00 PM-6:30 PM

E902-E	Concrete Inspector - Nuclear	State
306	Cold Weather Concreting	John Adams

3:30 PM-5:00 PM

121	Quality Assurance	Board
221	Aggregates	Crystal Parlor E
365	Service Life Prediction	Lisbon

3:30 PM-6:30 PM

211	Proportioning Concrete Mixtures	Grand Salon E
224	Cracking	Grand Salon B
352	Joints	Cherokee

6:30 PM-8:00 PM

	Concrete Mixer (Sponsored by ACI's Atlanta Chapter)	**Grand Ballroom**

DAILY EVENTS

DAILY EVENTS

DAY/TIME	FUNCTION	ROOM
THURSDAY, February 23, 1989		
8:00 AM-10:00 AM		
	Awards Breakfast $13.50/person	**Grand Salon A,B,C**
8:00 AM-5:00 PM		
	Registration	Grand Salon Foyer
8:30 AM-6:00 PM		
301	Specifications for Concrete	Dusseldorf
10:00 AM-1:00 PM		
	General Session and Standards Presentation	**Grand Salon D,E**
12:30 PM-1:30 PM		
357-3	Marine Structures	George Washington
1:00 PM-2:00 PM		
	Standards Board	Rockdale
1:30 PM-2:30 PM		
357-1	Serviceability	George Washington
1:30 PM-4:30 PM		
334	Shells	Embassy
2:00 PM-3:30 PM		
123	Research	Directors
225-2	Expert Systems	Henry
232	Fly Ash and Other Pozzolans in Concrete	Grand Salon B
304	Meas., Mix., Trans., Plac.	Fulton
517	Accelerated Curing	Thomas Jefferson
2:00 PM-5:00 PM		
332	Residential Concrete Work	Forsythe
359-2	Design	Room 438
359-3	Materials Construction and Ex.	Room 436
421	Slabs	Council
442	Lateral Forces	Cherokee
524	Plastering (Mtg. 3)	Board
548	Polymers in Concrete	Grand Salon C
550	Precast Concrete Structures	John Adams

DAY/TIME	FUNCTION	ROOM
THURSDAY, February 23, 1989		
2:00 PM-5:00 PM	**TECHNICAL SESSIONS:**	
	Use of Computers - Part I (118)	Club, State
	Column and Frame Design (441)	Douglas
	Research Needs (RCRC)	Newton
	★ Automation in Concrete Construction (TAC)	Grand Salon A
2:00 PM-6:30 PM		
	Board of Direction	Crystal Parlor F, G
2:30 PM-3:30 PM		
357-2	Strength Design	George Washington
3:30 PM-5:00 PM		
225-1	Math. Modeling	Henry
3:30 PM-6:30 PM		
357	Offshore Concrete Structures	George Washington
5:00 PM-6:30 PM		
225	Hydraulic Cements	Henry
FRIDAY, February 24, 1989		
8:00 AM-10:00 AM		
	Registration	Grand Salon Foyer
8:30 AM-1:00 PM		
359	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

COMM.	COMM. SHORT TITLE	DATE	TIME	ROOM
	Board of Direction	2/21	9:00A- 6:00P	Crystal Parlor F,G
	Board of Direction	2/23	2:00P- 6:30P	Crystal Parlor F,G
	Standards Board	2/23	1:00P- 2:00P	Rockdale
TAC	Technical Act. Comm. (Mtg. 1)	2/18	8:00A- 6:00P	Milan
TAC	Technical Act. Comm. (Mtg. 2)	2/20	8:00A- 1:00P	Milan
TAC	Review Group 1	2/19	8:00A- 6:00P	Milan
TAC	Review Group 2	2/19	8:00A- 6:00P	T. Jefferson
TAC	Review Group 3	2/19	8:00A- 6:00P	G. Washington
TAC	Review Group 4	2/19	8:00A- 6:00P	John Adams
EAC	Educational Act. Comm. (Mtg. 1)	2/19	9:00A- 5:00P	Gwinnett
EAC	Educational Act. Comm. (Mtg. 2)	2/21	2:00P- 5:30P	Douglas
E701	Construction Materials	2/20	2:00P- 5:00P	Douglas
E702	Designing Structures	2/20	8:30A-10:00A	Douglas
E703	Construction Practices	2/20	2:00P- 5:00P	G. Washington
E705	Ed. Computer Act.	2/21	8:30A-10:00A	T. Jefferson
E801	Student Concrete Projects	2/20	8:30A-11:30A	Dusseldorf
E901	Scholarships	2/20	2:00P- 5:00P	Room 436
E902	Certification (Mtg. 1)	2/20	8:00A-10:00A	Grand Salon D
E902	Certification (Mtg. 2)	2/21	8:30A- 1:00P	Grand Salon B
E902-A	Field Technician I	2/20	10:00A- 1:00P	Douglas
E902-B	Lab Technician	2/20	2:00P- 5:00P	T. Jefferson
E902-C	Concrete Insp.-General	2/20	2:00P- 6:30P	John Adams
E902-D	Concrete Craftsman	2/20	3:30P- 6:30P	Cobb
E902-E	Concrete Insp.-Nuclear	2/22	2:00P- 6:30P	State
E902-F	Formwork Designer	2/20	11:30A- 1:00P	G. Washington
E902-G	Shotcrete Nozzleman	2/20	2:00P- 5:00P	Newton
E902-Z	Training Courses	2/20	10:00A- 1:00P	Cobb
E903	Convention Training	2/21	9:00A-10:30A	Douglas
CAC	Chapter Activities Comm.	2/22	2:00P- 5:00P	Rockdale
CLC	Construction Liaison Comm.	2/20	10:00A-11:30A	G. Washington
	Convention Committee	2/22	10:00A- 1:00P	Lisbon
IAC	International Activities Comm.	2/20	3:30P- 5:00P	Rockdale
	Membership Committee	2/21	2:00P- 5:00P	G. Washington
	Planning Committee	2/19	2:00P- 5:00P	Forsythe
	Publications Committee	2/21	8:30A-11:30A	G. Washington
CMRC	Conc. Mat'l. Research Council	2/22	2:00P- 5:00P	Grand Salon C
TCRC	Construction Review Comm.	2/20	8:30A-10:00A	G. Washington
RC	Responsibility in Conc. Const.	2/20	3:30P- 5:00P	Crystal Parlor A
RCRC	Reinforced Conc. Research Council	2/19	3:30P- 5:00P	Douglas
TSC	Specifications Committee	2/22	1:00P- 5:00P	Council
JBRC	Int'l. Joints/Bearings Council	2/22	10:00A-11:30A	Council
116	Terminology & Notation	2/20	2:00P- 5:00P	Forsythe
117	Tolerances	2/20	8:30A-11:30A	Gwinnett
118	Use of Computers	2/20	10:00A- 1:00P	Henry
118-UG	Conc. Computer User Group	2/20	8:30A-10:00A	Henry
120	History of Concrete	2/20	8:30A-10:00A	Rockdale
121	Quality Assurance	2/22	3:30P- 5:00P	Board
121-TG	Owners/Designers	2/22	8:30A-10:00A	Douglas

COMM.	COMM. SHORT TITLE	DATE	TIME	ROOM
121-TG	Construction Suppliers	2/22	11:30A- 1:00P	Douglas
121-TG	Inspection Testing Agency	2/22	2:00P- 3:30P	Douglas
122	Energy Conservation	2/22	8:30A-11:30A	Rockdale
123	Research	2/23	2:00P- 3:30P	Directors
124	Concrete Esthetics	2/21	8:30A-11:30A	Forsythe
125	Lunar Concrete	2/20	9:00A- 5:00P	Embassy
201	Durability of Concrete	2/20	2:00P- 5:00P	Grand Salon B
207	Mass Concrete	2/20	8:30A-10:00A	Forsythe
209	Creep & Shrinkage in Concrete	2/21	3:30P- 5:00P	Henry
210	Erosion in Hydraulic Struct.	2/20	10:00A- 1:00P	Cabinet
211	Proportioning Conc. Mixtures	2/22	3:30P- 6:30P	Grand Salon E
211-A	Edit & Coordination	2/21	3:30P- 6:30P	Rockdale
211-B	Lightweight	2/20	3:30P- 6:30P	Board
211-C	No Slump	2/21	10:00A- 1:00P	T. Jefferson
211-D	High Strength	2/20	10:00A- 1:00P	Forsythe
211-E	Evaluation	2/20	10:00A- 1:00P	Rockdale
212	Chemical Admixtures	2/21	2:00P- 5:00P	Grand Salon E
213	Lightweight Aggregates	2/21	2:00P- 3:30P	Henry
213-A	High Strength	2/20	3:30P- 5:00P	Paulding
213-B	Ltwt. Conc. Parking Struct. & Bridges	2/21	8:30A-10:00A	Council
214	Strength Tests	2/20	10:00A- 1:00P	LIsbon
215	Fatigue of Concrete	2/21	1:30P- 3:30P	Rockdale
216	Fire Resistance of Structures	2/21	5:00P- 6:30P	G. Washington
221	Aggregates	2/22	3:30P- 5:00P	Crystal Parlor E
222	Corrosion	2/21	3:30P- 5:00P	Cherokee
223	Expansive Cement	2/22	8:30A-10:00A	Forsythe
224	Cracking	2/22	3:30P- 6:30P	Grand Salon B
225	Hydraulic Cements	2/23	5:00P- 6:30P	Henry
225-1	Math. Modeling	2/23	3:30P- 5:00P	Henry
225-2	Expert Systems	2/23	2:00P- 3:30P	Henry
227	Radioactive/Hazardous Mgmt.	2/21	2:00P- 3:30P	Cobb
228	Nondestructive Testing	2/22	9:00A-12:00P	G. Washington
229	Controlled Low-Strength Mat'l.	2/20	8:30A- 1:00P	Crystal Parlor E
230	Soil Cement	2/21	8:30A-11:30A	Board
232	Fly Ash & Other Pozz. in Conc.	2/23	2:00P- 3:30P	Grand Salon B
233	Ground Slag in Concrete	2/22	8:30A-10:00A	Gwinnett
234	Silica Fume in Concrete	2/22	2:00P- 5:00P	Paulding
301	Specifications for Concrete	2/23	8:30A- 6:00P	Dusseldorf
302	Construction of Floors	2/20	2:00P- 6:30P	Dusseldorf
303	CIP Architectural	2/22	2:00P- 5:00P	Cabinet
304	Meas., Mix., Trans., Plac.	2/23	2:00P- 3:30P	Fulton
305	Hot Weather Concreting	2/22	8:30A- 1:00P	Dusseldorf
306	Cold Weather Concreting	2/22	2:00P- 6:30P	John Adams
307	CIP Concrete Chimneys	2/21	8:00A-11:00A	Directors
308	Curing Concrete	2/20	8:30A-10:00A	Cabinet
309	Consolidation of Concrete	2/21	2:00P- 5:00P	Gwinnett
311	Inspection of Concrete	2/22	8:30A-11:30A	Milan
313	Concrete Bins & Silos (Mtg. 1)	2/20	7:00A- 1:00P	Crystal Parlor F
313	Concrete Bins & Silos (Mtg. 2)	2/20	2:00P- 6:30P	Crystal Parlor F
313	Concrete Bins & Silos (Mtg. 3)	2/21	8:30A- 1:00P	State
318	Standard Bldg. Code (Mtg. 1)	2/20	10:00A- 1:00P	Grand Salon B
318	Standard Bldg. Code (Mtg. 2)	2/21	2:00P- 6:30P	Grand Salon B
318	Standard Bldg. Code (Mtg. 3)	2/22	8:30A-11:30A	Grand Salon B
318-A	General Conc. & Const.	2/21	8:30A- 1:00P	Clayton
318-B	Reinforcement & Development	2/20	2:00P- 6:30P	Grand Salon D
318-C	Serviceability/Safety	2/20	2:00P- 6:30P	Clayton

COMM.	COMM. SHORT TITLE	DATE	TIME	ROOM
318-D	Flexure & Axial Loads	2/20	2:00P- 6:30P	Lisbon
318-E	Shear & Torsion	2/21	8:30A- 1:00P	Milan
318-F	Two-Way Slabs	2/20	2:00P- 6:30P	Milan
318-G	Prestressed Precast	2/21	8:30A- 1:00P	Grand Salon D
318-H	Seismic Provisions	2/21	8:30A- 1:00P	Lisbon
325	Concrete Pavements	2/20	2:00P- 3:30P	Cherokee
325-E	RCC Pavements	2/20	8:30A-11:30A	Cherokee
325-TG	316R-82 Revision	2/20	11:30A- 1:00P	Cherokee
330	Parking Lots	2/21	5:00P- 6:30P	Embassy
332	Residential Concrete Work	2/23	2:00P- 5:00P	Forsythe
334	Shells	2/23	1:30P- 4:30P	Embassy
336	Footings (Mtg. 1)	2/20	11:30A- 1:00P	Room 438
336	Footings (Mtg. 2)	2/20	2:00P- 7:00P	Room 438
340	Design Aids	2/21	2:00P- 6:30P	Forsythe
343	Concrete Bridge Design	2/22	8:30A-10:00A	Cherokee
343/348	Task Committee on LRFD	2/22	10:00A-11:30A	Cherokee
344	Circ. Prestressed Structures	2/21	2:00P- 6:30P	Council
344	Editorial Sub Committee	2/20	2:00P- 6:30P	Room 452
344	Seismic Sub Committee	2/21	8:30A- 1:00P	Room 436
345	Bridge Construction	2/22	2:00P- 5:00P	G. Washington
347	Formwork for Concrete	2/20	2:00P- 5:00P	Cabinet
348	Structural Safety	2/22	11:30A- 1:00P	Cherokee
348/343	Task Committee on LRFD	2/22	10:00A-11:30A	Cherokee
349	Nuclear Structures	2/20	2:00P- 5:00P	Henry
349-1	General Materials Const.	2/20	8:30A- 1:00P	Board
349-2	Design (Mtg. 1)	2/19	2:00P- 6:30P	Board
349-2	Design (Mtg. 2)	2/20	8:30A- 1:00P	Directors
349-3	Embedded Steel (Mtg. 1)	2/19	2:00P- 6:30P	Directors
349-3	Embedded Steel (Mtg. 2)	2/20	8:30A- 1:00P	T. Jefferson
350	Environmental Structures	2/21	2:00P- 5:00P	Clayton
351	Equipment Foundations	2/21	2:00P- 3:30P	Dekalb
351-3	Foundation of Static Equip.	2/20	8:30A-11:30A	John Adams
351-4	Grouting of Equip./Mach.	2/20	2:00P- 5:00P	Club
352	Joints	2/22	3:30P- 6:30P	Cherokee
355	Anchorage to Concrete	2/22	9:00A- 5:00P	Directors
357	Offshore Concrete Structures	2/23	3:30P- 6:30P	G. Washington
357-1	Serviceability	2/23	1:30P- 2:30P	G. Washington
357-2	Strength Design	2/23	2:30P- 3:30P	G. Washington
357-3	Marine Structures	2/23	12:30P- 1:30P	G. Washington
358	Concrete Guideways	2/21	2:00P- 5:00P	Room 436
359	Nuclear Vessels	2/24	8:30A- 1:00P	Council
359-2	Design	2/23	2:00P- 5:00P	Room 438
359-3	Materials Const. & Ex.	2/23	2:00P- 5:00P	Room 436
360	Design of Slabs on Grade	2/21	2:00P- 6:30P	Milan
362	Parking Structures	2/21	8:30A-11:30A	Henry
363	High Strength	2/21	8:30A-11:30A	Cherokee
364	Rehabilitation	2/22	2:00P- 3:30P	Cherokee
365	Service Life Prediction	2/22	3:30P- 5:00P	Lisbon
366	Precast Concrete Pipelines	2/21	9:00A-12:00P	Room 438
367	Precast Concrete Chimneys	2/21	11:30A- 1:00P	Directors
408	Bond/Devel. of Reinforcement	2/21	9:00A-12:00P	Dekalb
421	Slabs	2/23	2:00P- 5:00P	Council
423	Prestressed Concrete	2/22	2:00P- 5:00P	Grand Salon A
435	Deflection	2/22	2:00P- 5:00P	Club
437	Strength of Structures	2/20	2:00P- 3:30P	Rockdale
439	Steel Reinforcement	2/22	2:00P- 5:00P	Gwinnett
441	Reinforced Concrete Columns	2/20	3:30P- 6:30P	Directors

COMM.	COMM. SHORT TITLE	DATE	TIME	ROOM
442	Lateral Forces	2/23	2:00P- 5:00P	Cherokee
442-SC	Inelastic Design	2/21	2:00P- 5:00P	Embassy
444	Models of Concrete Structures	2/21	2:00P- 3:30P	Directors
445	Shear & Torsion	2/21	8:30A- 1:00P	Cobb
446	Fracture Mechanics	2/20	2:00P- 5:00P	Fulton
446-1	Sub 1	2/20	8:30A-10:00A	Club
446-2	Sub 2	2/20	10:00A-11:30A	Club
446-3	Sub 3	2/20	10:00A-11:30A	State
446-4	Sub 4	2/20	8:30A-10:00A	State
503	Adhesives (Mtg. 1)	2/21	8:30A- 1:00P	Fulton
503	Adhesives (Mtg. 2)	2/21	2:00P- 3:30P	Fulton
504	Joint Sealants	2/21	8:30A-10:00A	Rockdale
506	Shotcreting	2/21	8:30A- 1:00P	Crystal Parlor C
515	Coatings for Concrete	2/20	3:30P- 6:30P	Dekalb
517	Accelerated Curing	2/23	2:00P- 3:30P	T. Jefferson
523	Insulating & Cellular	2/21	10:00A-11:30A	Embassy
524	Plastering (Mtg. 1)	2/22	8:30A- 1:00P	Board
524	Plastering (Mtg. 2)	2/22	2:00P- 3:30P	Board
524	Plastering (Mtg. 3)	2/23	2:00P- 5:00P	Board
530	Masonry Structures	2/21	8:30A- 6:30P	Cabinet
530-TG	Modulus of Elasticity	2/20	8:30A- 1:00P	Council
530-TG	Veneers & Connectors	2/20	2:00P- 5:00P	Council
531	Concrete Masonry	2/22	8:30A-11:30A	Cabinet
533	Precast Panels	2/20	2:00P- 5:00P	State
543	Concrete Piles (Mtg. 1)	2/20	8:30A- 1:00P	Crystal Parlor A
543	Concrete Piles (Mtg. 2)	2/20	2:00P- 3:30P	Crystal Parlor A
544	Fiber Reinforced Concrete	2/21	2:00P- 6:30P	Grand Salon C
544-1	Steel Fibers	2/21	8:30A-10:00A	Crystal Parlor A
544-2	Glass Fibers	2/21	8:30A-10:00A	Crystal Parlor E
544-3	Synthetic Fibers	2/21	10:00A-11:30A	Crystal Parlor A
544-4	Vegetable Fibers	2/21	10:00A-11:30A	Crystal Parlor E
544-5	Structural Design	2/21	11:30A- 1:00P	Crystal Parlor A
544-6	State-of-the-Art	2/21	11:30A- 1:00P	Crystal Parlor E
545	Concrete Railroad Ties	2/20	11:30A- 1:00P	Club
546	Repair of Concrete	2/21	2:00P- 5:00P	Grand Salon D
546-1	Underwater Repair	2/20	3:30P- 6:30P	Cherokee
548	Polymers in Concrete	2/23	2:00P- 5:00P	Grand Salon C
548-A	Polymer PC Concrete	2/20	2:00P- 5:00P	Gwinnett
548-B	PC Overlays	2/21	8:30A-11:30A	Gwinnett
548-D	Sulfur Concrete	2/22	8:30A-11:30A	Room 438
549	Ferrocement	2/21	11:30A- 1:00P	Board
550	Precast Concrete Structures	2/23	2:00P- 5:00P	John Adams
551	Tilt-Up Concrete Construction	2/22	8:30A- 6:30P	Embassy
552	Cement Grouting (Mtg. 1)	2/20	6:00P- 9:00P	State
552	Cement Grouting (Mtg. 2)	2/21	2:00P- 5:00P	Board
553	Swimming Pools	2/20	10:00A-11:30A	Room 436
554	Bearing Systems	2/20	2:00P- 3:30P	Board
555	Removal & Reuse of Concrete	2/21	2:00P- 3:30P	State

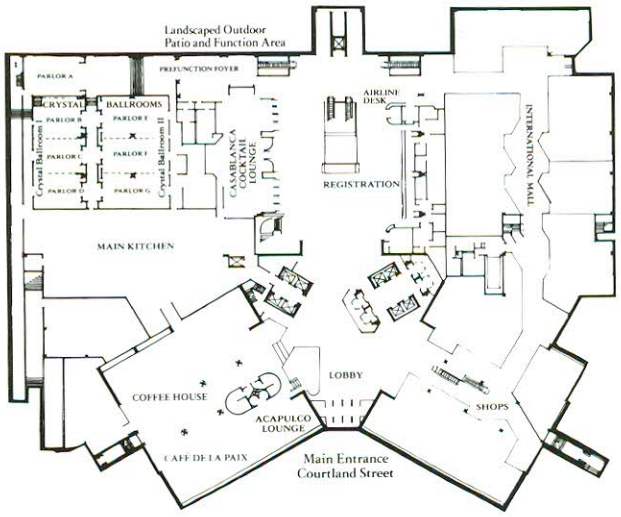
NOTE: Committees not listed did not request a meeting at this convention.

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 (Dusseldorf, Lisbon, Milan, Strasbourg and Vienna)	Third Floor
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

The ATLANTA HILTON AND Towers

FIRST FLOOR



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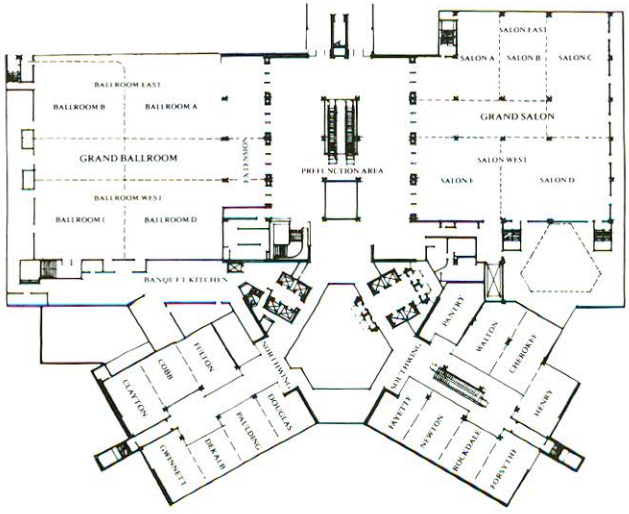
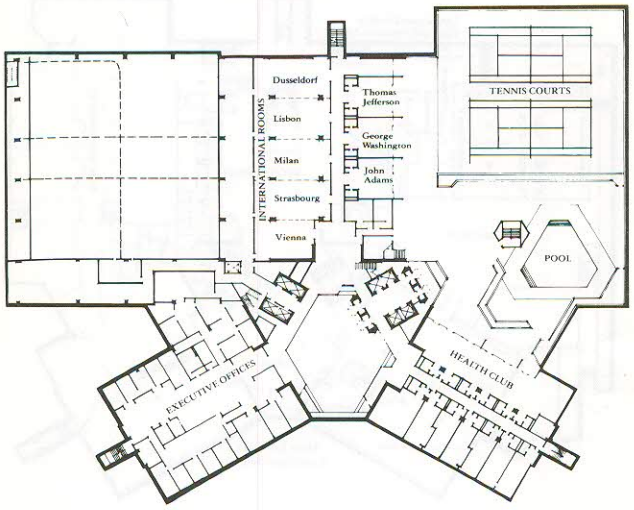
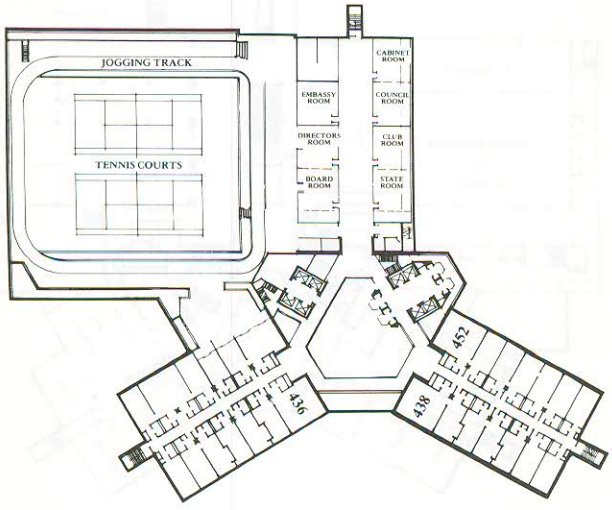


The ATLANTA HILTON AND Towers

THIRD FLOOR



FOURTH 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 breakfast 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

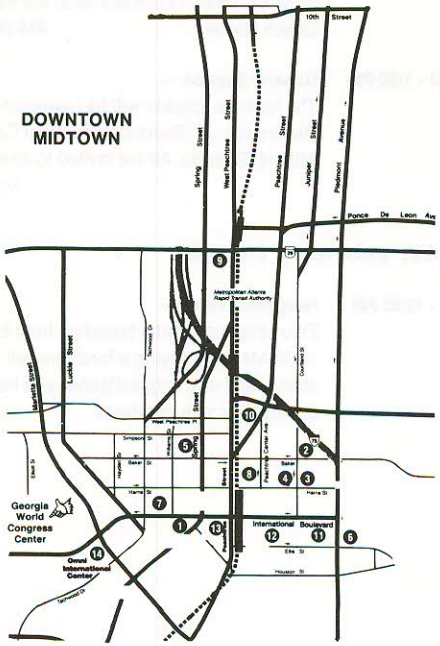
On show days, complimentary shuttle bus service will be provided by WOC between the Georgia World Congress Center and the official WOC hotel facilities. A frequent and efficient schedule will be maintained and all buses will be easily identified by the World of Concrete signs.

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

Detach This Section
And Schedule Your Meetings

Personal Log
1989 Annual Convention

Delegate's Name _____

Sunday, February 19, 1989

5:30 PM—
7:00 PM Opening Reception Grand Ballroom C, D

Monday, February 20, 1989

7:00 AM—
8:30 AM

8:30 AM—
10:00 AM

10:00 AM—
11:30 AM

11:30 AM—
1:00 PM

1:00 PM—
2:00 PM

2:00 PM—
3:30 PM

3:30 PM—
5:00 PM

5:00 PM—
6:30 PM

6:30 PM—
8:00 PM

Tuesday, February 21, 1989

7:00 AM—
8:30 AM

8:30 AM—
10:00 AM

10:00 AM—
11:30 AM

11:30 AM—
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1:00 PM—
2:00 PM

2:00 PM—
3:30 PM

3:30 PM—
5:00 PM

5:00 PM—
6:30 PM

6:30 PM—
8:00 PM

Wednesday, February 22, 1989

7:00 AM—8:30 AM		
8:30 AM—10:00 AM		
10:00 AM—11:30 AM		
11:30 AM—1:00 PM		
1:00 PM—2:00 PM		
2:00 PM—3:30 PM		
3:30 PM—5:00 PM		
5:00 PM—6:30 PM		
6:30 PM—8:00 PM	Concrete Mixer	Grand Ballroom

Thursday, February 23, 1989

7:00 AM—8:30 AM		
8:00 AM—10:00 AM	Awards Breakfast	Grand Salon A, B, C
10:00 AM—1:00 PM	General Session/Standards Presentation	Grand Salon D, E
1:00 PM—2:00 PM		
2:00 PM—3:30 PM		
3:30 PM—5:00 PM		
5:00 PM—6:30 PM		
6:30 PM—8:00 PM		

Friday, February 24, 1989

7:00 AM—8:30 AM		
8:30 AM—10:00 AM		
10:00 AM—11:30 AM		
11:30 AM—12:00 NN		

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
[redacted]

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

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 Tutokey, 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. "Saiid" Saiidi, Professor and Chairman; Joseph Shields, Department of Civil Engineering, University of Nevada-Reno, Reno, Nevada

TUESDAY, February 21, 1989
9:00 AM-12:00 NOON Room: **Crystal Parlor B**

★ THEME SESSION

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

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

THEME SESSION

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**

SESSIONS

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

★ THEME SESSION

TUESDAY, February 21, 1989
2:00 PM-5:00 PM Room: **Grand Salon A**

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

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

HOT TOPIC

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 Engineering, 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**

★ THEME SESSION

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
Richard A. Kaden, Corps of Engineers, Walla Walla, Washington

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.

SESSIONS

★ ★ HOT TOPIC

TUESDAY, February 21, 1989
2:00 PM-5:00 PM Room: **Lisbon**

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

TUESDAY, February 21, 1989
2:00 PM-5:00 PM Room: **Newton**

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; Hossain Hadje-Ghaffari, 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. Somajarji, 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. Taerwe, Senior Assistant, State University of Ghent, Magnel Laboratory for Reinforced Concrete, Ghent, Belgium

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

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

Videotape 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
Albert J. Gouwens, Packer Engineering Associates, Inc., Naperville, Illinois

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

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

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 Saatcioglu, 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

WEDNESDAY, February 22, 1989
9:00 AM-12:00 NOON Room: **Crystal Parlor G**

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
David J. Brown, White Jefferis & Associates, Poole Dorset, England; S.A. Jefferis, Department of Civil Engineering, University of London, Kings College London, Strand, London, England

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 Davidovits, 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

WEDNESDAY, February 22, 1989
9:00 AM-12:00 NOON Room: **Crystal Parlor F**

CREEP, SHRINKAGE, AND TEMPERATURE CHANGE AND THEIR EFFECTS ON CONCRETE STRUCTURES — COMPUTER ANALYSIS - PART I

SESSIONS

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.

WEDNESDAY, February 22, 1989
9:00 AM-12:00 NOON Room: **Newton**

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. Karaouli, 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, Fukuako-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
R.G. Oesterle; D.M. Schultz; A. Azizinamini; J.D. Glikin, Managers, Analytical Design Section, Construction Technology Laboratories, Inc., Skokie, Illinois

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.

★ THEME SESSION

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 Siefken
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.

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

WEDNESDAY, February 22, 1989
2:00 PM-5:00 PM Room: **Crystal Parlor F**

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

WEDNESDAY, February 22, 1989
2:00 PM-5:00 PM

Room: **Fulton**

★ THEME SESSION

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

WEDNESDAY, February 22, 1989
2:00 PM-5:00 PM Room: **Newton**

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
Pottsdam, 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. Misa; L. Robles-Austriaco; R.P. Pama; Professors of Civil Engineering, Asian Institute of Technology, Bangkok, Thailand

Development of Kevlar Fiber Reinforced Cement Composites
Parviz Soroushian, 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
Kenneth D. Vinson, Product Development, Proctor and Gamble Cellulose Company, Memphis, Tennessee; James I. Daniel, Senior Structural Engineer, Construction Technology Laboratories, Inc., Skokie, Illinois

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

WEDNESDAY, February 22, 1989
2:00 PM-5:00 PM Room: **Clayton**

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 Tilt-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 Room: **Grand Salon A, B, C**

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.

SESSIONS

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. Sturrup, 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
I-85/I-285 Interchange, Georgia
Linn Cove Viaduct, North Carolina
Tampico Bridge, Mexico
Ingraham 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)

Revision of Standard Specification for the Construction of End Bearing Drilled Piers (ACI 336.1-79) (Revised 1985)

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

SESSIONS

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
Mosallem D. Kassem, Assistant Professor, Department of Civil Engineering, College of Technological Studies, Rumaithiyah, 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 Chairmen:

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 Saatcioglu, 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

THURSDAY, February 23, 1989
2:00 PM-5:00 PM Room: **Newton**

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, Northbrook, Illinois

Innovative Funding for Research in the Construction Industry
Richard Tucker, Director, Construction Industry Institute, The University 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**

★ THEME SESSION

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 Room: **Club, State**

USE OF COMPUTERS - PART II

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

Advanced Building Technology (ABT) Matrix
Photios 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; Olsan 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

FRIDAY, February 24, 1989
9:00 AM-12:00 NOON Room: **Newton**

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, D jursholm, 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-ken, 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, Reichhold 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

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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

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