50th Annual Convention

American Concrete Institute

Shirley-Savoy Hotel
Denver, Colorado
February 22-26, 1954
Henry L. Kennedy, President
American Concrete Institute
16263 W. McNichols Road
Detroit, Michigan

Dear Mr. Kennedy and Members:

As Governor of Colorado and on behalf of our citizens, it is my great pleasure and privilege to welcome you to our Mile-High State - colorful Colorado. It is a distinct honor for Colorado to be host to your outstanding organization for its Golden Anniversary.

We have many opportunities for your enjoyment and we invite you to partake of them. Whether you prefer educational, cultural or recreational activities, Colorado has the best, and they are yours during your visit here. To those of you who enjoy outdoor sports, our mountain highways are open the year-round and lead to a veritable winter wonderland where our invigorating climate adds to the exhilarating experience of skating and skiing among the pines and peaks of our majestic mountains.

We also offer you our famous brand of warm western hospitality for which Colorado is noted. I sincerely hope that your visit here will be so enjoyable that it will be an invitation to return again and again. We extend to you a cordial welcome and say "Welcome Partners!"

Cordially,

Dan Thornton
Governor

Mr. Henry L. Kennedy, President
American Concrete Institute
16263 W. McNichols Road
Detroit, Michigan

Dear Mr. Kennedy:

We are honored that again you have chosen the Queen City of the Plains and Mountains for the Convention of the American Concrete Institute. As host for the people of Denver, I extend to your members a hearty welcome.

The nation will benefit through the progressive action taken by your conference. In Denver, where construction has risen to a new peak, we are especially interested in your deliberations.

Colorado citizens are proud of the contribution local members have made to concrete technology and of the reputation they maintain on a national basis.

Let us know if we can be of service to you in any way.

Best wishes for a successful conference.

Cordially yours,

Quigg Newton
Mayor
**BOARD OF DIRECTION**

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**TECHNICAL ACTIVITIES COMMITTEE**
(In charge of convention program and of technical publications)

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R. E. Copeland
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L. H. Tuthill
I. L. Tyler
William A. Maples, Secretary

†Address
AMERICAN CONCRETE INSTITUTE
18263 W. McNichols Road, Detroit 19, Michigan

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**Program Time Table**

**Saturday, February 20 and Sunday, February 21**
Meetings of Finance Committee, Executive Committee, Technical Activities Committee, and Board of Direction

**Monday, February 22**
9:00 a.m.—Technical Committee Meetings (see p. 8)
Registration opens—Empire Room Lobby
10:00 a.m.—Exhibits open—Empire Room (see p. 20)
Coffee for Ladies—Room 321—Brown Palace Hotel (see p. 19)
2:00 p.m.—Technical Committee Meetings (see p. 8)
8:00 p.m.—Anniversary Dinner—Lincoln Room—By tickets previously purchased (see p. 7)

**Tuesday, February 23**
9:00 a.m.—Registration Continues—Empire Room Lobby
10:00 a.m.—First General Session—Lincoln Room
12:00 noon—Institute Officers reception and luncheon for scheduled program participants (by prior invitation)—Centennial Room
Ladies Luncheon—Broadmoor Hotel, Colorado Springs (see p. 19)
2:00 p.m.—General Session—Lincoln Room
8:00 p.m.—Motion Pictures on Concrete—Lincoln Room
8:00 p.m.—Meeting of Committee 318, Standard Building Code—Centennial Room

**Wednesday, February 24**
9:00 a.m.—Design Session—Lincoln Room
Materials and Construction—Colorado-Centennial Rooms
12:15 p.m.—Awards Luncheon—Lincoln Room
2:00 p.m.—Ladies’ Ten—Wolhurst Club
2:30 p.m.—Precast and Prestressed Concrete—Lincoln Room
Materials and Properties—Colorado-Centennial Rooms
6:30 p.m.—Cocktails (By tickets previously purchased)
8:00 p.m.—Dinner Dance

**Thursday, February 25**
All day at Denver Federal Center (see p. 18)
8:00 a.m.—Buses leave Shirley-Savoy Hotel (Obtain tickets at registration desk)
9:00 a.m.—Research Session—Auditorium
10:00 a.m.—Ladies’ Coffee—Room 321, Brown Palace Hotel
12:30 p.m.—Barbecue Buffalo Luncheon
2:00 p.m.—Tour of Engineering Laboratories

**Friday, February 26**
Inspection trips by bus for those making prior reservations (see p. 19)
DENVER CONVENTION COMMITTEE

Executive Committee

R. F. BLANKS, Chairman
E. W. THORSON, Vice-Chairman
ORLEY PHILLIPS, Treasurer
W. H. PRICE, Secretary

Arrangements Committee

ORLEY PHILLIPS          Finance and Exhibits
S. H. POE               Publicity
DAMON RUNYON            Reception and Registration
R. F. MCCUNE            Entertainment
A. G. HOYD              Field Trips and Transportation
R. W. MORRIS            Printing
E. C. HIGGINS          Membership
L. P. WITTE             Tickets and Programs

LADIES

Executive Committee

MRS. W. H. PRICE, Chairman
MRS. R. F. BLANKS
MRS. E. W. THORSON

Arrangements Committee

MRS. I. S. RAMUSSON      Reception
MRS. H. S. MEISSNER      Coffee (Monday)
MRS. J. R. FLOREY        Luncheon
MRS. L. P. WITTE         Tea
MRS. C. R. WILDER        Coffee (Thursday)

9 a.m.—5 p.m., DAILY
MONDAY, TUESDAY, and WEDNESDAY
FEBRUARY 22, 23, 24, 1954

CONVENTION REGISTRATION
in charge of
ETHEL B. WILSON, Assistant Treasurer
Registration fee—$2.00

(All ladies and registered nonmember visitors are welcome at general sessions, Anniversary Dinner, Dinner Dance, and Barbecue Luncheon)

Buy your tickets for the Monday evening Anniversary Dinner by 2:00 p.m. Monday.
Buy your tickets for the Wednesday noon AWARDS LUNCHEON at time of registration.
Tickets for Wednesday evening Cocktails and Dinner Dance must be purchased by 2:00 p.m. Wednesday.

See bulletin board for special notices.

12 noon sharp, Tuesday—Luncheon for all scheduled program participants in the general convention sessions. (By invitation)

Registration for Thursday Program
and Friday Inspection Trips

For Thursday's Barbecue Luncheon and tours of Bureau of Reclamation laboratories (see p. 18), and Friday's sightseeing and inspection trips (p. 19), the Denver Convention Committee provides advance registration. Get your name on the lists so that bus space may be available for all who wish to participate in these interesting events.

TECHNICAL COMMITTEE MEETINGS

See p. 8 and 9 and bulletin board at registration desk for time and location.

NOTES FOR PROGRAM PARTICIPANTS

• Participants in the program should not fail to leave with the stenotype reporter manuscripts from which papers or discussions are presented. The ACI Secretary will later provide opportunity for manuscript revision before consideration for JOURNAL publication.

• Upon recognition by the Chairman a discusser will please state his name and convention registration number distinctly and go to a microphone so he may be heard by all. If presented from manuscript, it should be left with the stenotype reporter.

• A "Convention Review" will be published in the News Letter section of the April ACI JOURNAL.
Monday, February 22

9:00 a.m.—Registration—Empire Room Lobby

Technical Committee Meetings

Shirley-Savoy Hotel
Committee 206, Bond Stress Blue Spruce Room
Committee 315, Detailing R/C Structures Colorado Room
Committee 609, Compaction of Concrete Centennial Room

Brown Palace Hotel
Committee 214, Evaluation of Field Tests Room 240
Committee 323, Prestressed Concrete (Steering Committee only) Tabor Room
Committee 324, Precast Concrete Stratton Room
Committee 612, Curing Wedgewood Room
Committee 616, Application of Paint Room 238

Cosmopolitan Hotel
Committee 318, Standard Building Code Board Room
Subcommittee 2, Materials and Tests Empire Room
Subcommittee 3, Concrete Quality Governors Room
Subcommittee 6, Design Paddock Room
Committee 327, Ultimate Load Design 10:00 a.m.—Exhibits open—Empire Room

2:00 p.m.—Technical Committee Meetings

Shirley-Savoy Hotel
Committee 323, Prestressed Concrete Colorado Room
Steering Committee, 1940 Joint Committee report Centennial Room

Brown Palace Hotel
Committee 209, Volume Changes and Plastic Flow Room 238
Committee 213, Lightweight Aggregate Concrete Stratton Room
Committee 332, Residential Concrete Room 321
Committee 613, Proportioning Concrete Mixes Tabor Room
Committee 617, Pavements and Bases Wedgewood Room
Committee 716, High-Pressure Steam Curing Room 240

Cosmopolitan Hotel
Committee 212, Admixtures Directors Room
Committee 318, Standard Building Code Subcommittee 10, Flat Slabs Empire Room
Committee 327, Ultimate Load Design Paddock Room
See pages 9 and 12 for later technical committee meetings

8:00 p.m.—Anniversary Dinner—Lincoln Room
Activities listed on Dinner Program

10:00 a.m., Tuesday, February 23

Lincoln Room

President Henry L. Kennedy, Presiding

Opening remarks

Appointment of tellers to canvass annual election ballots

Standards

Proposed Standard Specifications for the Design and Construction of Reinforced Concrete Chimneys

Report of Committee 505

E. A. Dockstader, Chairman


Proposed Recommended Practice for Selecting Proportions for Concrete

Report of Committee 613

Walter H. Price, Chairman

See ACI Journal, October 1953. Proposed as a standard to supersede "Recommended Practice for the Design of Concrete Mixes (ACI 613-44)."

History

History of the American Concrete Institute

Raymond E. Davis
Consulting Engineer, Berkeley, Calif.

Motion Picture

"How to Transport, Place, Finish, and Cure Quality Concrete"

This second ACI-PCA film on proper techniques in handling concrete will be introduced by Prof. James A. McCarthy, Notre Dame University, Chairman of the ACI Film Advisory Committee which passed on the technical details of the film.

Committee Meetings

9:00 a.m.—Committee 115, Research (Executive Group only) Colorado Room
Committee 318, Standard Building Code Subcommittee 8, Shear and Diagonal Tension Centennial Room
Committee 318, Standard Building Code Subcommittee 11, Columns and Walls Blue Spruce Room
ACI CONVENTION AREA

SHIRLEY-SAVOY HOTEL
DENVER

Lincoln Room

Lincoln Street Entrance

15th Ave Entrance

Court

Empire Room

Lobby

Colorado Room

Centennial Room

Silver Saguaro Room

Blue Saguaro Room
2:00 p.m., TUESDAY, FEBRUARY 23

Lincoln Room

President Henry L. Kennedy, Chairman

GENERAL

Economic Trends Affecting Concrete Construction
Norman P. Mason
Chairman, Construction and Civic Development
Department Committee, Chamber of Commerce
of the United States

Selection of Construction Materials
Joseph F. Jelley
Rear Admiral, CEC, USN, Director of Construction,
Department of Defense

Use of Concrete by the Bureau of Reclamation
W. A. Dexeheimer
Commissioner of Reclamation, U. S. Department
of the Interior

Use of Concrete by the Corps of Engineers
Samuel D. Sturgis, Jr.
Major General, Chief of Engineers, Department of the Army

8:00 p.m., TUESDAY, FEBRUARY 23

MOTION PICTURES

Lincoln Room

"Inside Story of Concrete"

"Navy Builds All-Precast Concrete Warehouses"

"Namako"—Precast Concrete Construction in Canada

"Prestressed Concrete Cylinder Piling Being Used for Off-
Shore Work in the Gulf Coast Region"

"How to Transport, Place, Finish, and Cure Quality Con-
crete" (second showing)

Centennial Room

Meeting of Committee 318, Standard Building Code

9:00 a.m., WEDNESDAY, FEBRUARY 24

Lincoln Room

Vice-President Charles S. Whitney, Chairman

DESIGN

Design of Blast Resistant Structures
Charles S. Whitney, Boyd G. Anderson
and Edward Cohen
Ammann and Whitney, New York, N. Y.

Inelastic Analysis and Ultimate Load Design of Reinforced
Concrete Cylindrical Long Shell Roofs
George C. Ernst, R. R. Marlette and
Glen V. Berg
University of Nebraska, Lincoln, Neb.

Model Analysis of a Skewed Rigid Frame Bridge and Slab
D. H. Pletta and Dan Frederick
Virginia Polytechnic Institute, Blacksburg, Va.

Design Criteria for Concrete Dams
John J. Hammond
Bureau of Reclamation, Denver, Colo.

Flat Slab Solved by Model Analysis
Gerald Bowen and R. F. Shaffer
Presan Corp., Los Angeles, Calif.
9:00 a.m., WEDNESDAY, FEBRUARY 24

Concurrent sessions morning and afternoon in Lincoln Room and Colorado-Centennial Rooms

Colorado-Centennial Rooms

Vice-President CHARLES H. SCHOLER, Chairman

MATERIALS AND CONSTRUCTION

Design and Construction of a Folded Flat Plate Roof Structure

Milo S. Ketchum
Ketchum and Konkel, Engineers, Denver, Colo.

Structural Applications of Hyperbolic Paraboloids

Felix Candela
Architect, Cubiertas "Ala," S. A., Mexico City, D. F.

Combined Form and Reinforcement for Concrete Slabs

Bengt F. Friberg
Consulting Engineer, St. Louis, Mo.

Cellular Concretes

Rudolph C. Valore, Jr.
National Bureau of Standards, Washington, D. C.

Factors Influencing the Strength of Concrete as Revealed by a Six-Year Record of Concrete Control

Joseph J. Waddell

12:15 p.m., WEDNESDAY, FEBRUARY 24

AWARDS LUNCHEON

Lincoln Room

Presentation of Awards

President Kennedy on behalf of the Board of Direction

Leonard C. Wason Medal for the "Most Meritorious Paper" of ACI Proceedings V. 49 (April 1953 Journal) to

David Watstein
for his paper
"Effect of Straining Rate on the Compressive Strength and Elastic Properties of Concrete"

Leonard C. Wason Medal for "Noteworthy Research" to

Phil M. Ferguson and J. Neils Thompson
for the work reported in their paper (Proceedings V. 49, March 1953 Journal)
"Diagonal Tension in T-Beams Without Stirrups"

American Concrete Institute Construction Practice Award for a "paper of outstanding merit" on concrete construction practice to

Alden M. Klein and J. H. A. Cockett
for their paper in the ACI Journal (January, 1953) entitled
"Design and Construction of a Fully Vibration-Controlled Forging Hammer Foundation"

Announcement of election to Honorary Membership:

Raymond E. Davis

Report of Tellers and Introduction of New Officers

Recognition of Retiring Directors and Officers

Retiring President's Address

Henry L. Kennedy
Dewey and Almy Chemical Co., Cambridge, Mass.
2:30 p.m., WEDNESDAY, FEBRUARY 24

Concurrent sessions in Lincoln Room and Colorado-Centennial Rooms

Lincoln Room

Past President R. F. Blanks, Chairman

PRECAST AND PRESTRESSED CONCRETE

Sandwich-Type Precast Concrete Construction

F. Thomas Collins
F. Thomas Collins and Associates, San Gabriel, Calif.

One Hundred Thirty Foot Span Precast Concrete Hangar

Otto Safir
Safir Engineering Consultants, Ltd., Vancouver, B. C., Canada

Practical Aspects of Plant Produced Prestressed Concrete

Orley O. Phillips

Formulas for the Rapid Design of Continuous Prestressed Concrete Members

E. J. Fieseler
Illinois Institute of Technology, Chicago, Ill.

Static and Fatigue Tests of Partially Prestressed Concrete Members

P. W. Areles
Consulting Engineer, London, England

Colorado-Centennial Rooms

Director Walter H. Price, Chairman

MATERIALS AND PROPERTIES

Admixtures

W. T. Moran
(Chairman, ACI Committee 212)
Bureau of Reclamation, Denver, Colo.

Effect of Age of Concrete on its Resistance to Scaling Caused by Using Calcium Chloride for Ice Removal

W. C. Hansen
Research Laboratory, Universal Atlas Cement Co., Buffington Station, Gary, Ind.

Void Spacing as a Basis for Producing Air-Entrained Concrete

T. C. Powers
Portland Cement Assn., Chicago, Ill.

Fundamental Factors in the Drying Shrinkage of Concrete Block

George L. Kalousek
Owens-Illinois Glass Co., Toledo, Ohio

Method of Estimating the Water Content of Portland Cement Concrete at the Time of Hardening

James S. Blackman
University of Nebraska, Lincoln, Neb.

EVENING

Lincoln Room

6:30 p.m.—Cocktails
8:00 p.m.—Dinner
9:00 p.m.—Dancing

Enjoy an evening of entertainment—no speeches—a get-together just for fun!
Tickets must be purchased by 2:00 p.m. this date.
THURSDAY, FEBRUARY 25

Buses will leave the Shirley-Savoy Hotel, at 8 a.m. for the Denver Federal Center, 8 miles west of the city. A buffalo barbecue luncheon will be served at the Bureau of Reclamation laboratories following the Research Session. After the luncheon, open house will prevail throughout the laboratories. There will be guided tours covering all of the laboratories, but those who wish to devote more time to specific phases of the laboratories may feel perfectly free to do so. Special guides will be provided to conduct visitors to specific points of interest. Buses will return to the city by 4:30 p.m. Transportation and luncheon tickets must be purchased by 2:00 p.m. Wednesday.

9:00 a.m.—Theater, Bureau of Reclamation Laboratories, Denver Federal Center

ANNUAL OPEN SESSION OF ACI COMMITTEE 115, RESEARCH

Stephen J. Chamberlin, Chairman
George W. Washa, Secretary

This convention feature differs from general sessions in that the information is not released for publication. Request is made that proceedings be regarded as CONFIDENTIAL. A group of short papers will be presented on research techniques and preliminary results.

Fatigue and impact of prestressed concrete beams

Investigation of shear strength of concrete frame members without shear reinforcement

Analysis of full-scale precast prestressed concrete bridge members under repetitive loads

Study of early strength of concrete

Volume change and stress-strain characteristics of concrete

Investigation of fiber glass tension members as reinforcement in prestressed concrete

Effect of alkalis released by pozzolans on alkali-aggregate reaction in mortar

Tests to determine the effect of steam curing and of period of vibration on concrete durability

Use of bonded-wire resistance strain gage in measuring transient and residual dimensional changes in concrete during freezing and thawing

Jet blast resistant concretes

ATTENDANCE AT THE SESSION IS THE ONLY SURE WAY OF BEING IN ON THESE PREVIEWS OF FUTURE DEVELOPMENTS IN CONCRETE.

12:30 p.m.—Buffalo Barbecue Luncheon

2:00 p.m.—Tour of Bureau Laboratories

FRIDAY, FEBRUARY 26

INSPECTION TRIPS

8:00 a.m.—Climax Molybdenum Co. Mine, Climax, Colo.

An all-day trip leaving Shirley-Savoy Hotel at 8:00 a.m. and returning about 4:00 p.m. The Climax Mining Co. has developed a method of underground mining in which concrete plays an important part. Excellent scenery en route. This trip is limited to 40 and is for men only.

8:00 a.m.—Denver's Reservoir No. 22 Dam, South Boulder Creek

A half-day trip, leaving Shirley-Savoy Hotel at 8:00 a.m. to see the Denver Water Board's dam under construction on South Boulder Creek. Aggregate processing, materials handling, and concrete placing equipment will be inspected in addition to the dam.

9:00 a.m.—Berthoud Pass Scenic Trip

An all-day trip, leaving Shirley-Savoy Hotel at 9:00 a.m. and returning about 3:00 p.m. See some of Colorado's scenic areas and watch the skiing at Berthoud Pass.

9:00 a.m.—Denver area, Concrete construction projects

A half-day trip, leaving Shirley-Savoy Hotel at 9:00 a.m. Visits interesting concrete construction projects in the Denver area. Prestressed concrete structures, a prestressing plant, and other unique concrete applications will be featured.

Tickets for all trips must be purchased in advance at registration desk by 5:00 p.m. Wednesday.

FOR THE LADIES

Monday, 10:00 a.m. —Coffee, Room 321, Brown Palace Hotel
Tuesday, 9:00 a.m. —Leave Brown Palace Hotel by Travel Coach for Luncheon, Broadmoor Hotel, Colorado Springs, Colorado
Wednesday, 2:00 p.m.—Tea, Wolhurst Club
Thursday, 10:00 a.m. —Coffee, Room 321, Brown Palace Hotel
Don't fail to examine the exhibit area—a 1954 Convention feature, sponsored by The Denver Convention Committee

EXHIBITORS

1954 ACI CONVENTION

Autolene Lubricants Co.
Baldwin-Lima-Hamilton Corp.
Centennial Engineering Co.
Cen-Vi-Ro Manufacturing Co.
Colorado Builders Supply Co., The
Dart Manufacturing and Sales Co.
Felker Manufacturing Co.
Gar-Bro Manufacturing Co.
Granco Steel Products Co.
Hunts Process Co.
Instant Moisture Control Industries
(Division of Pre-Mix Concrete Co.)
K. C. Construction Supply Co.
Long Construction Co.
Maginniss Power Tool Co.
Master Builders Co., The
Preload Construction Corp.
Prestressed Concrete of Colorado, Inc.
Prestressing, Inc.
Quickway Clamp Co.
Richmond Screw Anchor Co.
John A. Roebling's Sons Corp.
Sika Chemical Corp.
Sonoco Products Co.
Superior Concrete Accessories, Inc.
Symons Clamp and Manufacturing Co.
Techkote Company, Inc.
Thompsons Water Seal
Universal Form Clamp Co.
Viber Co.
Water Seals Inc.
Western Waterproofing Co.

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