PROGRAM

63rd ANNUAL CONVENTION

In Toronto, Ontario, Canada

1867-1967

CANADA’s 100th YEAR of CONFEDERATION

AMERICAN CONCRETE INSTITUTE

April 1-7, 1967

ROYAL YORK HOTEL

Toronto, Ontario, Canada
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* Address
AMERICAN CONCRETE INSTITUTE
P. O. Box 4754
Detroit, Michigan 48219

- CONVENTION REGISTRATION -

Special Registration,
Sunday, April 2 . . . 2:00 to 5:00 p.m.
Registration, April 3-6 . . . 8:00 a.m. to 6:00 p.m.
Registration, April 7 . . . 8:00 a.m. to 2:00 p.m.

Registration fee of $10.00 payable at the registration desk in the Convention Floor
lobby, Royal York Hotel.

Registered members and non-members as well as
the ladies are invited to attend the various technical
sessions, symposia, social activities, and the ACI
men-of-the-year Awards Luncheon.

PLEASE WATCH FOR SPECIAL ANNOUNCEMENTS DAILY ON THE BULLETIN BOARD
NEAR THE REGISTRATION DESK.

* * * SPECIAL EVENTS * * *

Technical-Educational Exhibits . . . Tuesday through
Thursday in Ballroom A, on the Convention Floor.
Have your program card (inside back flap) stamped
completely to qualify for valuable door prizes.

Events Sponsored by the Local Committee:

* Tuesday, April 4—Cocktail Hour, 6:30 p.m. in the
Concert Hall. “A Toast to Canada’s 100th Birthday.” Compliments of the local committee. Please
wear your badge.

* Wednesday, April 5—CENTENNIAL DINNER . . .
Leave hotel from the Front Street exit on special
buses at 5:30 p.m. for the Queen Elizabeth Build-
ing at the Canadian National Exhibition grounds.
Two classes of tickets will be available for sale
at the Registration Desk. One class, limited to
200 persons, includes a visit to the Ontario Hydro
Research Laboratory. The other is for those re-
turning at 7:30 p.m. for the Royal York and the
evening session of the International Bridge Sym-
posium. Make sure you get the right ticket.

* Friday, April 7—Montreal and the site of Expo
‘67 . . . Provided there is sufficient demand, this
inspection trip will begin from the Union Station
(across from the Royal York) at 4:45 p.m. Check
for details and hotel and train reservations at the
Registration Desk.

Special Events Cont’d
Special Events Cont’d

National Research Council Symposium Luncheon — Friday, April 7, at 12:00 noon in the Ontario Room. This luncheon is a part of the Concrete Performance Symposium — a symposium held in honor of the late Dr. T. Thorvalson — sponsored by the Division of Building Research, National Research Council of Canada. Tickets $10.00 per person. This $10.00 luncheon fee covers the cost of the luncheon and an advance copy of the symposium proceedings published by the NRC. (After the convention) this volume will sell for $10.00.)

Architectural Design Competition . . . Winning sketches and honorable mention entries on display beginning Tuesday.

Photo Display . . . 15 panels containing photos of unusual and outstanding concrete structures from all over the world. Monday through Friday.

Awards Luncheon and Installation of New ACI Officers . . . 12:30 p.m., Thursday in the Concert Hall. One may purchase tickets up to 2:00 p.m., Wednesday at the Registration Desk. $4.00 per person.

University of Illinois Alumni Breakfast . . . 7:15 a.m., Wednesday, in Room #3. Tickets are available from alumni and University of Illinois staff members. $2.75 per person.

PCA Alumni Association . . . Thursday, April 6, 5:00 p.m. to 7:00 p.m. in the Saskatchewan Room.

Ladies Program . . . see the daily schedule on page 25.

ACI Headquarters . . . . . . . . . . . . . . . . . . . Room B

BREAKFASTS

Monday, April 3, 7:30 a.m. — Quebec Room — New chairmen of technical committees (by invitation)

Tuesday, April 4, 7:30 a.m.—Manitoba Room—Program participants in International Symposium on Concrete Bridge Design (by invitation)

Wednesday, April 5, 7:30 a.m.—Manitoba Room — Program participants in two Research Sessions sponsored by Committee 115 (by invitation)

Thursday, April 6, 7:30 a.m.—Nova Scotia Room — Program participants in General Session, Construction Session, Design/Analysis Session (by invitation)

Friday, April 7, 7:30 a.m. — Nova Scotia Room — Special technical committee chairmen breakfast (by invitation)

TECHNICAL COMMITTEE MEETINGS

Meeting topics are in italics. Be sure to check the bulletin board for last-minute changes or added meetings.

SUNDAY, April 2
2:00 p.m. - 5:00 p.m.
COMMITTEE

Meeting Room
213 Lightweight Aggregate Concrete (Recommended Practice and Research) Algonquin

SUNDAY, April 2
7:30 p.m.
213 Subcommittee 4 of Committee 213, Lightweight Aggregate Concrete (Research) Algonquin
### MONDAY, April 3

#### 9:00 a.m. - 12:00 noon

**COMMITTEE**

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<tr>
<td>318 Subcommitee 9 of Committee 318, Standard Building Code - General Design <em>(Proposed revisions)</em></td>
<td>Newfoundland</td>
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<td>344 Circular Prestressed Concrete Structures <em>(Draft report)</em></td>
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<td>350 Sanitary Engineering Structures <em>(Draft report)</em></td>
<td>10 &amp; 11</td>
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<tr>
<td>426 Shear and Diagonal Tension - Joint ACI-ASCE <em>(Research and recommendations)</em></td>
<td>Algonquin</td>
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<td>437 Strength Evaluation of Existing Concrete Structures <em>(Subcommittee reports)</em></td>
<td>Nova Scotia</td>
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<td>438 Torsion <em>(Code requirements)</em></td>
<td>Board Room (20th floor)</td>
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<tr>
<td>512 Precast Structural Concrete - Joint ACI-ASCE <em>(Recommended practices)</em></td>
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<td>533 Precast Panels <em>(Proposed standard)</em></td>
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<td>543 Concrete Piles <em>(Draft report)</em></td>
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<td>344 Circular Prestressed Concrete Structures <em>(Continuation of morning session)</em></td>
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<td>350 Sanitary Engineering Structures <em>(Continuation of morning session)</em></td>
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<td>428 Limit Design <em>(Code recommendations)</em></td>
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<td>437 Strength Evaluation of Existing Concrete Structures <em>(Continuation of morning session)</em></td>
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<td>438 Torsion <em>(Continuation of morning session)</em></td>
<td>Board Room (20th Floor)</td>
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<tr>
<td>443 Concrete Bridge Design <em>(Subcommittee reports and draft report)</em></td>
<td>Algonquin</td>
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<tr>
<td>523 Insulating and Cellular Concrtes <em>(Draft guide)</em></td>
<td>Saskatchewan</td>
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<tr>
<td>531 Concrete Masonry Structures <em>(Subcommittee reports)</em></td>
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<tr>
<td>543 Concrete Piles <em>(Continuation of morning session)</em></td>
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<td>318 Subcommitee 20 of Committee 318 Standard Building Code - Slabs</td>
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<td>439 High Strength Reinforcement in Concrete <em>(Design guides)</em></td>
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<tr>
<td>443 Subcommittees of Concrete Bridge Design <em>(Continuation of afternoon session)</em></td>
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### WEDNESDAY, April 5

**9:00 a.m. - 12:00 noon**

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<tr>
<td>High Pressure Steam Curing Territories</td>
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**2:00 p.m. - 5:00 p.m.**

| 115 Research Territories |  |
| 211 Proportioning Concrete Mixes (Revision of standards) Algonquin | 211 |
| 223 Expansive Cement Concretes (Continuation of morning session) Manitoba | 223 |
| 308 Curing Concrete (Draft report) Alberta | 308 |
| 313 Concrete Bins and Silos (Continuation of morning session) British Columbia | 313 |
| 347 Formwork for Concrete (Revision of standard and manual) 5 | 347 |
| 441 Concrete Columns—Joint ACI-ASCE (Code of Revisions) Quebec | 441 |
| 442 Lateral Forces on Multistory Frames (Draft report) Library | 442 |
| 515 Coatings for Concrete Saskatchewan | 515 |
| 517 Low Pressure Steam Curing (Proposed standard) Nova Scotia | 517 |
| 524 Portland Cement Plastering (Revision of guide) New Brunswick | 524 |
| 544 Fiber-Reinforced Concrete York | 544 |

### WEDNESDAY, April 5

**8:30 a.m. - 12:00 Midnight**

**INTERNATIONAL SYMPOSIUM ON CONCRETE BRIDGE DESIGN**

... Concert Hall

This symposium is sponsored by ACI Committee 443, Concrete Bridge Design, under the chairmanship of Professor Shu-t'ien Li. The proceedings of this symposium will be published by the American Concrete Institute in the ACI Symposia Series.

Program Chairman: Leonidas T. Delyannis, Chairman, Symposium Program Committee, Committee 443; chief bridge engineer, David Volkert & Associates, Washington, D.C.

**MORNING SESSION**

**8:30 a.m. - 12:00 Noon**

Presiding Cochairman: Shu-t'ien Li, chairman, Committee 443; professor of civil engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota

Design and Construction of Prestressed Concrete Through-Girder Railway Bridges in Japan—Michiyuki Kohno and Yoshio Ozaka, structural engineers, Structural Design Office, Japanese National Railways, Tokyo, Japan

The Hudson Hope Bridge—Its Post-Tensioned Box Girder Stiffening Deck and Prestressed Rock Anchors—L. Osipov, partner, Phillips, Barratt and Partners, Vancouver, British Columbia

Prestressed Concrete Bridge Construction with Stepping Formwork Equipment—Hans Wittfoht, director, Polensky and Zöllner, Frankfurt am Main, Germany

Three Span Continuous Prestressed Concrete Bridge Constructed of Precast Units in Cantilever Construction—Arne Lundgren, Consulting Engineer, Holte, Denmark; and Frode Hansen, chief engineer, Christiansen and Nielsen, Ltd., London, England

**Ultimate Design—Serviceability Investigation (A Unified Method for Reinforced Concrete Bridge Design)**

— Noël J. Everard, professor of engineering mechanics, Arlington State College, Arlington, Texas
MORNING SESSION (Continued)
8:30 a.m. - 12:00 Noon

Fatigue Behavior of Prestressed Concrete Bridge Beams — Paul W. Abeles, visiting professor of civil engineering, University of Kentucky, Lexington, Kentucky; Furman W. Barton, assistant professor of civil engineering, and Earl I. Brown II, professor of civil engineering, Duke University, Durham, North Carolina

Continuous, Post-Tensioned, Torsionally Stiff Concrete Bridges — Krishan G. Bassi, Watone T. Lin, and Brian S. Richardson, senior designers, Bridge Division, Ontario Department of Highways, Downsview, Ontario

Experiences from Fatigue and Rupture Tests on a Prestressed Concrete Bridge — A. Rösl, Head of Department for Reinforced Concrete, Swiss Laboratories of Testing Materials and Research, Zurich, Switzerland

AFTERNOON SESSION
1:30 p.m. - 5:00 p.m.

Presiding Cochairman: Laurence Cazaly, president, Cazaly Associates, Toronto, Ontario

Earthquake Resistant Details for Concrete Bridges — Robert G. Lium, bridge design engineer, Swedrup and Parcel and Associates, Inc., Bellevue, Washington

Through-Voided Box Beams for Railway Bridge Construction — George F. Leyh, structural engineer, Portland Cement Association, Chicago; and Freeman P. Drew, research engineer structures, Association of American Railroads, Chicago, Illinois

Limit Design of Continuous Concrete Bridge Girders — Kurt H. Gerstle, professor of civil engineering, University of Colorado, Boulder, Colorado; and M. Z. Cohn, professor of civil engineering, University of Waterloo, Waterloo, Ontario

Post-Tensioned Waffle and Multispan Cantilever System Composing the Hegenber Overpass — T. Y. Lin, professor of civil engineering, University of California, Berkeley; Felix Kulka, president; and Y. D. Yang, vice-president, T. Y. Lin, Kulka, Yang and Associates, San Francisco, California

AFTERNOON SESSION (Continued)
1:30 p.m. - 5:00 p.m.

Can High-Strength Reinforcement Be Used in Highway Bridges? — S. D. Lash, head, Department of Civil Engineering, Queen’s University, Kingston, Ontario

Torsional Analysis of Single Thin-Walled Trapezoidal Concrete Box Girder Bridges — David H. H. Tung, associate professor of civil engineering, Department of Civil Engineering, The Cooper Union for the Advancement of Science and Art, New York, New York

Concrete Box Girder Bridges Analyzed as Folded Plates — Kuang-Han Chu, professor of civil engineering, Department of Civil Engineering, Illinois Institute of Technology, Chicago, Illinois; and Elliott Dudnik, structural engineer, Skidmore, Owings and Merrill, Chicago, Illinois

Load Distribution in Concrete Box Girder Bridges — A. C. Scordelis, professor of civil engineering, Department of Civil Engineering, University of California, Berkeley; R. E. Davis, senior bridge engineer, California Division of Highways, Sacramento; and K. S. Lo, structural engineer, T. Y. Lin, Kulka, Yang and Associates, San Francisco, California

5:30 p.m. — Buses leave for CENTENNIAL DINNER (see special events)

EVENING SESSION
8:00 p.m. - 11:00 p.m.

Presiding: T. Y. Lin, vice-chairman, Committee 443; professor of civil engineering, Department of Civil Engineering, University of California, Berkeley, California

Some Types of Tied Bridges in Prestressed Concrete — Riccardo Morandi, Consulting Engineer, Rome, Italy

Stress-Ribbon, Bridle-Chord, and Mushroom-Shaped Bridges and Recent Developments in Free Cantilever Construction of Prestressed Concrete Bridges — Ulrich Finsterwalder, Herbert Kupfer, and Herbert Schambrock, Dyckerhoff and Widmann KG, Munich, Germany

Use of Precasting in Construction of Long-Span, Prestressed Concrete Bridges Built in Cantilever — Jean Muller, Entreprises Campenon Bernard, Paris, France
THURSDAY, April 6

FIRST GENERAL SESSION

9:30 a.m. - 12:00 Noon - Concert Hall

CHAIRMAN: Peter Smith, General Chairman, Construction Committee, and head, Muelle Research Section, Ontario Department of Highways, Downsview, Ontario

* Welcoming by General Chairman Peter Smith

* Appointment of Tellers


* Presentation of Charter to Canadian Capital Chapter, ACI — presentation by ACI President Arthur R. Anderson

Recognition of new Chapter — presentation by J. E. Stanners, past president, Ontario Chapter, ACI

* Report from Technical Activities Committee — S. D. Burks, chairman, TAC, manager, Rock Products Chemicals West, Dewey and Almy Chemical Division, W. R. Grace & Company, San Leandro, California

* Committee Progress Reports:

  Proposed Design Considerations and Criteria for Concrete Members Prestressed with Unbonded Tendons — Joint ACI-ASCE Committee 423 — Prestressed Concrete. Presented by William A. Connolly, member, Committee 423, and structural engineer, Cleverdon, Varney and Pike, Consulting Engineers, Boston, Massachusetts


12:30 p.m. . . . Concert Hall

AWARDS LUNCHEON

HONORARY MEMBERSHIP

F. M. Lea
N. M. Newmark
L. H. Tuthill

Henry C. Turner Medal to ROY W. CARLSON
"for his many outstanding original contributions to concrete technology, design, and construction; and in recognition of the further advances which have resulted from his development of research and measuring techniques."

Alfred E. Lindau Award to NICOLAS ESQUILLAN
"for numerous outstanding contributions to the art of reinforced concrete design, as exemplified in his design of the world's largest free span concrete shell structure for the Exposition Palace in Paris."

Henry L. Kennedy Award to JOHN P. THOMPSON
"in recognition of his long and effective service in the interests of the ACI Building Code Requirements for Reinforced Concrete, and in particular for his devoted service to the Building Code Committee as Secretary from 1949 to 1965."

Charles S. Whitney Award to ULRICH FINSTERWALDER and the engineering firm of DYKERHOFF and WIDMANN
"for distinguished contributions to the engineering development of concrete shells and prestressed bridges."

Wason Medal for Most Meritorious Paper to ALAN H. MATTOCK

Wason Medal for Research to D. N. ACHARYA and K. O. KEMP
for their paper, "Significance of Dowel Forces on the Shear Failure of Rectangular Reinforced Concrete Beams Without Web Reinforcement," ACI JOURNAL, October 1965, pp. 1265-1280.

Construction Practice Award to E. R. CANCEL and A. MUÑOZ F.

* Announcement of Student Winners in Architectural Design Competition
* Report of Tellers and Introduction of New Officers
* Presentation of Memento to Retiring President
The concurrent sessions on Research by ACI Committee 115, differs from the other general sessions of the program in that the

**RESEARCH SESSION on REINFORCED CONCRETE**

**. . . . Concert Hall**

**SESSION CHAIRMAN:** Adrian Pauw, secretary of ACI Committee 115, and professor and chairman of civil engineering, Department of Civil Engineering, University of Missouri, Columbia, Missouri

**ACTING SECRETARY:** Bruce E. Foster, chief, Inorganic Building Materials Section, National Bureau of Standards, Washington, D.C.

**Blast Resistance of Reinforced Concrete Slabs** — William A. Keenan, research structural engineer, U.S. Naval Civil Engineering Laboratory, Port Hueneme, California

**Load Transfer Problems in Reinforced Concrete Floor Slabs** — James O. Jirsa, professor, Civil Engineering Department, Rice University, Houston, Texas

**Inelastic Behavior of Reinforced Concrete Frames under Cyclic Loads** — Gajanan M. Sabnis, research assistant, Cornell University, Ithaca, New York

**Bond Characteristics of Prestressing Strand** — Manfred Stocker, Department of Civil Engineering, University of Illinois, Urbana, Illinois

**RESEARCH SESSION on PLAIN CONCRETE**

**. . . . Ontario Room**

**SESSION CHAIRMAN:** William A. Cordon, chairman of ACI Committee 115 – Research, and associate professor and director of structural materials research laboratory, Department of Civil Engineering, Utah State University, Logan, Utah

**ACTING SECRETARY:** Joseph H. Walker, vice-president of Research and Development, Portland Cement Association, Skokie, Illinois

**Compressive Strength of Concrete at Temperatures to 1200 °F** — M. S. Abrams, Portland Cement Association, Skokie, Illinois

**Use of Time of Set Measurements in Prediction of Form Pressure** — T. G. Clendenning, masonry research engineer; and M. T. Loughborough, Hydro-Electric Power Commission of Ontario, Toronto, Ontario

**New Binders for Concrete for Use in Desalination Plants** — G. L. Kalousek, research advisor on concrete, U.S. Bureau of Reclamation, Denver, Colorado

**Structural Concrete with Nylon Fibres** — Kishor C. Mehta, professor, Department of Civil Engineering, Texas Technological College, Lubbock, Texas
RESEARCH SESSION on REINFORCED CONCRETE (Continued)

... Concert Hall

Effects of Variable Repeated Loading on Reinforced Concrete Structures — V. V. Bertero, professor of civil engineering, University of California, Berkeley, California

Favorable and Unfavorable Effects of Non-Tensioned Steel in Prestressed Concrete Beams — Dan E. Branson, professor of civil engineering; and A. F. Shaikh, instructor, University of Iowa, Iowa City, Iowa

Studies on Cracks and Bond in Prestressed Concrete Beams — P. W. Abeles, visiting professor; F. M. Barton; J. Slepetz, Department of Civil Engineering, Duke University, Durham, North Carolina

Effect of Strain-Hardening on the Shakedown of Concrete Beams — C. Yimsrikul; and K. H. Gerstle, professor of civil engineering, Department of Civil Engineering, University of Colorado, Boulder, Colorado

Is it Shear or Bond? The Cause of Diagonal Tension Failure — G. N. J. Kani, professor of civil engineering, Department of Civil Engineering, University of Toronto, Toronto, Ontario

Integration of Service Systems in Flat Plate Structures — John M. Hanson, manager, Products and Applications Development Section, Portland Cement Association, Skokie, Illinois

RESEARCH SESSION on PLAIN CONCRETE (Continued)

... Ontario Room

Dental Cements — Are They of Structural Value? — J. H. Appleton, professor of civil engineering, University of Alabama, Birmingham, Alabama

Creep of Concrete Under Triaxial Compressive Stresses — A. M. Neville, dean; K. S. Gopalakrishnan, graduate student; and A. Ghali, associate professor, University of Calgary, Calgary, Alberta

Microcracking and Time Dependent Strains of Plain Concrete — Bernard L. Meyers, research assistant, Cornell University, Ithaca, New York

Difficulties in the Production of High-Strength Air-Entrained Concrete — Delmar L. Bloem, director of engineering, National Sand & Gravel Association, and the National Ready-Mixed Concrete Association, Silver Spring, Maryland

Influence of Water-Reducing Agents on Water-Cement Ratio Strength Relationship — K. R. Lauer, associate professor of civil engineering; and J. A. Fitzpatrick, University of Notre Dame, Notre Dame, Indiana

Tension Bond Between Mortar and Aggregate — a Two-Dimensional Study Utilizing the Split Cylinder Test — W. G. Heslop, associate professor of civil engineering, University of British Columbia, Vancouver, British Columbia
FRIDAY, April 7 . . . . . . . . . . . . . . . . . . . . . 8:30 a.m. to 11:30 a.m.

CONCURRENT SESSIONS

(Not time designations for each topic)

DESIGN AND ANALYSIS

. . . Ballroom

CHAIRMAN: H. E. H. Roy, president, Ontario Chapter, ACI; and partner, John B. Parkin Associates, Architects and Engineers, Toronto, Ontario

8:35 a.m.

Dynamic Characteristics of a Reinforced Concrete Building — N. Norby Nielsen, associate professor, Department of Civil Engineering, University of Illinois, Urbana, Illinois

9:00 Discussion

9:10 Door Openings in Shear Walls — Joseph Schweighofer, associate professor, Department of Civil Engineering, University of Toronto, Toronto, Ontario

9:35 Discussion

9:45 COFFEE BREAK

10:05 Behavior of Plain and Reinforced Concrete Beams Under Combined Bending, Shear, and Torsion — M. S. Mirza, research associate; and J. O. McCutcheon, professor and chairman, Department of Civil Engineering and Applied Mechanics, McGill University, Montreal, Quebec

10:30 Discussion

10:40 Flat Plate Analysis of Olentangy River Dormitories — Russel S. Fling, president, Fling and Eeman, Inc., Columbus, Ohio

11:05 Discussion

CONCRETE PERFORMANCE — RESISTANCE OF CONCRETE TO SULFATE AND OTHER ENVIRONMENTAL CONDITIONS

. . . Concert Hall

—sponsored by the Division of Building Research, NATIONAL RESEARCH COUNCIL of Canada, Ottawa, Ontario

A Symposium held in honor of the late Dr. T. Thorvaldson

SESSION CO-CHAIRMEN: R. F. Legget, director, Division of Building Research; P. J. Sereda, research officer, Division of Building Research, National Research Council, Ottawa, Ontario

8:35 a.m.

Contributions of Dr. T. Thorvaldson to Cement and Concrete Research — C. J. MacKenzie, former president of National Research Council; and E. G. Swenson, research officer, Division of Building Research, National Research Council, Ottawa, Ontario

9:00 Some Studies on the Performance of Concrete Structures in Sulfate-Bearing Environments — F. M. Lea, retired director, Department of Science and Industrial Research, Berkhamsted, Herts., England

9:30 COFFEE BREAK

9:50 Field and Laboratory Tests of Sulfate Resistance of Concrete — Bryant Mather, chief, Concrete Division, U.S. Army Engineer Waterways Experiment Station, Jackson, Mississippi

10:20 Combating Sulfate Attack on Concrete on Bureau of Reclamation Projects — B. P. Bellport, chief engineer, Bureau of Reclamation, Denver, Colorado

10:50 Field and Laboratory Studies of the Sulfate Resistance of Concrete — George Verbeck, director of research, Research and Development Division, Portland Cement Association, Skokie, Illinois
FRIDAY, April 7

1:30 p.m. to 4:30 p.m.

CONCURRENT

(Note time designations for each topic)

CONSTRUCTION

... Ballroom


1:35 p.m.

Construction of Habitat '67 at Expo 67 — D. J. Fitzgerald, project manager, Francon, Ltd., Montreal, Quebec

1:55

Discussion

2:05

High Strength Concrete at Willows Creek — A. J. Burgess, chief engineer, Morrison, Hershfield, Millman, and Huggins, Ltd., Toronto, Ontario; J. Bunting, construction supervisor, Guy F. Atkinson Co., South San Francisco, California; J. Ryell, concrete testing engineer, Ontario Department of Highways, Downsview, Ontario

2:25

Discussion

2:35

COFFEE BREAK

2:55

Rubble Aggregate Concrete Construction at Trent University — Morden S. Yolles, president, M. S. Yolles Associates, Ltd., Consulting Engineers, Toronto, Ontario

3:15

Discussion

3:25


3:45

Discussion

CONCRETE PERFORMANCE

(Second Session)

... Concert Hall

SESSION CO-CHAIRMEN: N. B. Hutcheon, assistant director; and E. G. Swenson, research officer, Division of Building Research, National Research Council, Ottawa, Ontario

1:30

The Chemistry of Sulfate-Resisting Cements — W. C. Hansen, consulting chemist, Valparaiso, Indiana

1:55

Experience With Concrete in Sulfate Environments in Western Canada — G. C. Price, concrete engineer; and R. Peterson, chief soil mechanics and materials engineer, Prairie Farm Rehabilitation Administration, Saskatoon, Saskatchewan

2:20

Experience in the Winnipeg Area With Sulfate-Resisting Cement Concrete — W. D. Hurst, city engineer, City of Winnipeg, Winnipeg, Manitoba

2:45

COFFEE BREAK

3:00

Scaling of Concrete by Frost Action — J. H. Keyser, chief, Technical Division, Control and Research Laboratory, Department of Public Works, City of Montreal, Montreal, Quebec

3:30

Case Histories of Concrete Durability in Ontario Highway Structures — J. Ryell, concrete testing engineer; and Peter Smith, head, Materials Research Section, Ontario Department of Highways, Downsview, Ontario

4:00

Observations of Sidewalk Concrete During Fifteen Years Exposure — W. S. Weaver, chief chemist and manager of research; and H. L. Isabelle, chief engineer of sales, Canada Cement Company, Montreal, Quebec

Examples of Concrete Performance in Sea Water — D. C. Tibbets, research officer, Atlantic Regional Station, National Research Council, Halifax, Nova Scotia (presented by title only)

Field Performance of Concretes in Prairie Soils of High Sulfate Contents — J. J. Hamilton, and G. O. Handegord, research officers, Prairie Regional Station, National Research Council, Saskatoon, Saskatchewan (Presented by title only)
TORONTO
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R. P. G. Pennington (Printing)
R. T. Sheppard (Entertainment)
E. Munro (Reception)

LADIES PROGRAM

MON., April 4
9:00 a.m.-5:00 p.m. Registration
9:30 a.m.-10:30 a.m. Coffee and Danish
2:00 p.m.- Tour Toronto City Hall

TUES., April 4
9:00 a.m.-5:00 p.m. Registration
9:30 a.m.-10:30 a.m. Coffee and Danish
10:30 a.m.- FREE DAY
6:30 p.m.-8:00 p.m. “Icebreaker Event”

WED., April 5
9:00 a.m.-5:00 p.m. Registration
9:30 a.m.-10:30 a.m. Coffee and Danish
10:30 a.m.-
LUNCH at the Toronto Board of Trade Country Club, Woodbridge, Ontario. Home of the 1967 Carling's World Golf Championship (NO CHARGE). Includes tour, cocktails, lunch, and perhaps a small fashion show during lunch. Leave Country Club at approximately 2:00 p.m. Enroute to Royal York Hotel, by bus, a stop will be made at the Yorkdale Shopping Centre . . . the world's largest enclosed shopping mall.
5:30 p.m. Buses will leave from the Front Street exit for the Queen Elizabeth Building and the Centennial Dinner. Two classes of tickets are available. Ask at the Registration Desk.
6:30 p.m. CENTENNIAL DINNER with husbands at the Queen Elizabeth Building

THUR., April 6
9:00 a.m.-5:00 p.m. Registration
10:00 a.m.-
Meet in hotel lobby in front of main doors (Front Street) for walking tour of Toronto's Subway to Bloor Street, the Colonnade, Lothien Mews, and Yorkville's famous boutiques. Shopping and lunch at will. A map and names of stores and restaurants will be supplied for your convenience.
8:30 p.m.-
O'KEEFE CENTRE—The National Ballet performance “La Sylphide” (subject to change). Followed by refreshments and dancing to a three-piece orchestra in the lower lounge . . . our own private party. Approximate cost . . . $17.00 per couple, plus refreshments. WHEN DID YOU LAST TAKE YOUR HUSBAND OUT?

FRI., April 7
9:00 a.m.- Coffee and Danish

Ladies Arrangements

Mr. J. L. Franceschini and the wives of the local committee members

Ladies Hospitality Suite . . . Room A
TECHNICAL-EDUCATIONAL EXHIBITS

Be sure to visit each of these exhibits. . . .
Discover for yourself the latest materials, equipment, and services that are available to help you in your endeavor . . . and, at the same time, qualify for valuable door prizes.

American Can Company
BBR Canada Limited
Bethlehem Steel Corporation
CONenko Canada Limited
Desco International Association
Erigo Products, Inc.
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