
—To provide a comradeship in finding the best ways to do concrete work of all kinds and in spreading that knowledge.

34th Annual Convention

AMERICAN CONCRETE INSTITUTE

THE PALMER HOUSE—CHICAGO

Tuesday, Wednesday and Thursday

February 22, 23 and 24, 1938

Tuesday 9:30 a. m.—Registration begins.

Tuesday 2 p. m.—Mass Concrete.

Tuesday 4:15 p. m.—Committee Confabs.

Tuesday 8 p. m.—Reinforced Concrete.

Wednesday 2 p. m.—A. C. I. Affairs—Monuments, Mixes and Light-Weight Concrete.

Wednesday 7 p. m.—34th Annual Dinner.

Thursday 9:30 a. m.—Concrete Research.

Thursday 2 p. m.—Silos—Sulphate Resistance—Curing Compounds.

Thursday, 8 p. m.—Reinforced Concrete.

Committee Meetings—See "Bulletins"—near Registration Desk.

MEMORANDA

Papers and Discussions

Participants in the program should leave copies of papers and of written discussions with the Chairman of the meeting at which they are presented. The Secretary will later provide further opportunity for proof or manuscript revision before publication.

Non-members, as well as members, are invited to participate in discussion within time limits imposed by the program schedule and in the discretion of the Chairman. Upon recognition by the Chairman please state distinctly your name or the registration number as it appears on your convention badge.

The "Why" of Convention Badges

Two Institute members who were convention newcomers at the New York meeting a year ago thought there were a lot of "cold fish" in A. C. I. who didn't fit in with our slogan about "Comradeship." These two new members were too polite to say just that, but that's what they meant. Hence this year's badges—

Long-time members who know a lot of people wear badges with blue ribbon. If Blue Ribbon Badge finds itself in proximity to Red Ribbon Badge, Blue Ribbon Badge is supposed to "thaw," because Red Ribbon Badge is one of us who doesn't know everybody. If Red Ribbon Badge will meet Blue Ribbon Badge half way it will help.

ALSO, and this is important, both Blue Ribbon Badges and Red Ribbon Badges are supposed to "thaw" when in proximity to No-Ribbon Badges—non-members.

2 p. m., Tuesday

CHAIRMEN
PRESIDENT J. C. PEARSON
PAST-PRESIDENT P. H. BATES

Study of Mass Concrete

Institute Committee 108, Properties of Mass Concrete, has been studying the subject of mass concrete since 1930. It brings to the Institute on this occasion brief extracts by members of the Committee of portions of the report which is now in preparation.

Problems Involved in Mass Concrete Construction and Methods of Attack by the Committee

54 R. E. DAVIS Chairman
Professor of Civil Engineering, University of California, Berkeley

Some Time-Temperature Effects on Mass Concrete

J. W. KELLY 66
Associate Research Engineer, Engineering Materials Laboratory, University of California

Field Survey

F. R. McMILLAN 43
Director of Research, Portland Cement Association, Chicago
Presenting a resume of observations on 42 major structures visited by special sub-committee.

Causes of Cracking in Mass Concrete

R. F. BLANKS
of the Bureau of Reclamation, Denver, Colo.
Presenting laboratory investigations and field observations.

Temperatures, Strains and Stresses in Mass Concrete

ROY W. CARLSON 69
Assistant Professor of Civil Engineering, Massachusetts Institute of Technology, Cambridge

Discussion

Concluding Remarks

R. E. DAVIS

Appointment of Tellers

4:15 p. m., Tuesday

Committee Confabs

At least half the value of convention week is incidental to the scheduled program. Men go to conventions to meet their kind, to discuss problems peculiar to small groups, to mingle and debate with individuals the ins and outs of problems current in their minds or jobs.

As a nucleus for such mingling of men and ideas, some of the more active A. C. I. committees are assigned tables in the rear of the meeting room—a table to each such committee. Immediately after the Mass Concrete session the Chairman or the Secretary or other members of each committee present will welcome all comers who have an interest in some phase of the committee's work. There will be no formalities and new A. C. I. members or non-members may crack the ice of their diffidence; make themselves known and say or ask what is in their minds.

Chairmen of Institute committees are selected with a great deal of care. They are competent to represent the best thought of the special field to which each one is assigned. The confabs begun under such circumstances are not only to be encouraged for their own immediate value but because they are a means of opening up the doors of the Institute to the full value of its personnel. The contacts afforded by the Institute are an important part of what it has to offer. The full use of these contacts need not be restricted to the hour and a half or two-hour period especially set aside for them. They may be continued at odd intervals throughout convention week and they may easily ripen into organization experience of great value.

Committees participating are:

- 108—Properties of Mass Concrete—RAYMOND E. DAVIS, Chairman
- 109—Plastic Flow—RAYMOND E. DAVIS, Chairman
- 115—Research—M. O. WITHEY, Chairman, INGE LYSE, Secretary
- 312—Plain and Reinforced Concrete Arches—CHARLES S. WHITNEY, Chairman
- 315—Detailing Continuous Beams and Frames—A. J. BOASE, Chairman
- 409—Recommended Practice in Architectural Monolithic Concrete Construction—A. J. BOASE, Chairman
- 501—Standard Building Code—A. W. STEPHENS, Chairman; R. R. ZIPPRODT, Secretary
- 612—Recommended Practice for Curing Concrete—MARK MORRIS, Chairman
- 613—Recommended Practice for the Design of Concrete Mixes—R. F. BLANKS, Chairman
- 614—Recommended Practice in Measuring, Mixing and Placing Concrete—LEWIS H. TUTHILL, Chairman
- 714—Recommended Practice for Silo Stave Manufacture and Stave Silo Construction—C. A. HUGHES, Chairman
- 804—Wearing Surfaces for Floors—J. FRUCHTBAUM, Chairman

MEMORANDA

Convention papers and reports are available for distribution only upon publication in the A. C. I. Journal. They then become available also in separate prints at 25 to 50c each.

This announcement is made to discourage individual requests which the Institute finds impossible to meet, for prior distribution.

8 p. m., Tuesday

CHAIRMAN

PAST PRESIDENT A. E. LINDAU

Principles of Shell Dome Design

E. C. MOLKE AND J. E. KALINKA
Roberts & Schaefer Co., Chicago

Thin shell domes of reinforced concrete came from Europe to America where there are now eleven such structures. Literature of shell domes still lacks the development of the underlying design principles which the authors present.

The Resistance of Reinforced Concrete Columns to Eccentric Loads

F. E. RICHART
Research Professor of Engineering Materials, University of Illinois, Urbana

AND

TILFORD A. OLSON
University of Illinois

Of more than 2000 concrete column tests on record, only a handful employed eccentric loading, or any type of loading which produced combined direct and flexural stress. The present paper reviews certain of the test data available, presents the results of about 80 recent tests conducted by the authors and gives a general conclusion as to the strength of eccentrically loaded columns. Current analyses of stresses in such columns based on the modular ratio, n , are reviewed and discussed, and simplified formulas are proposed for the design of columns subject to bending. The paper should be of interest in connection with the report of Committee 501, Standard Building Code.

Standard Building Code—Report of A. C. I. Committee 501

A. W. STEPHENS, Chairman; R. R. ZIPPRODT, Secretary

Preliminary to proposing changes in the A. C. I. Code adopted tentatively in 1936 the Committee holds a public hearing on debatable code provisions, presenting for discussion proposed revisions of: Chapters 1 (General) and 2 (Materials and Tests). Chapter 7, particularly Sections 706 and 709, will be presented in considerably revised form, to make Section 709 (Floors with Supports on Four Sides) more readily usable by designing engineers; Chapter 10 as particularly related to the design of spirally reinforced concrete columns and probably also Section 1110 (Permissible Combined Compressive and Tensile Stress) to make that section more usable. Other chapters may also be presented, provided the editorial sub-committee has opportunity to act upon them.

2 p. m., Wednesday

CHAIRMEN

PRESIDENT J. C. PEARSON

VICE-PRESIDENT JOHN J. EARLEY

Institute Affairs

Report of Tellers
Induction of Officers
Report of the Board of Direction
Address by the President

✓1 **Construction of the San Jacinto Memorial**

C. A. BULLEN

W. S. Bellows Construction Co., Houston, Texas

Mr. Bullen's paper will deal with the construction problems encountered in building the highest masonry structure in the world (570 ft. 6 in.—the San Jacinto Memorial.) Among these problems being a 6,000 cu. yd. concrete foundation core placed in 57 hours; a tapering shaft with walls 4 ft. thick in which the concrete was placed against the stone facing and a huge concrete star on top of the monument, which has been completed this month.

✓2 **Lightweight Concrete Pavement on the San Francisco-Oakland Bay Bridge**

GLENN B. WOODRUFF

Engineer of Design, San Francisco-Oakland Bay Bridge, San Francisco

This paper telling how light weight concrete was used to save an estimated three million dollars on the San Francisco-Oakland Bay Bridge, appears in the January-February JOURNAL.

✓3 **Thomas Alva Edison Memorial Tower**

JOHN J. EARLEY

Architectural Sculptor, Earley Studios, Washington, D. C.

Mr. Earley's paper describing the work on the new Thomas Alva Edison Memorial Tower at Menlo Park, N. J., offers that work to the Institute as a thesis to serve as a starting point for the labors of the new Institute committee (412) assigned to write a recommended practice for architectural concrete of the exposed aggregate type. This committee work is in the nature of a response to a challenge from R. H. Shreve, Vice-President of the American Institute of Architects, who addressed A. C. I. at its 33rd annual dinner in New York last February and invited the cooperation of this Institute with the American Institute of Architects toward the further development of reinforced concrete as an architectural medium. Mr. Shreve is a member of the new A. C. I. committee assigned to take up the task for which his address was the immediate inspiration.

X4 **Recommended Practice for the Design of Concrete Mixes**

R. F. BLANKS AND E. N. VIDAL

Bureau of Reclamation, Denver, Colo.

Among recent difficult assignments to Institute committees was that to Committee 613, R. F. Blanks, Chairman, to write a recommended practice for the design of concrete mixes. The literature is voluminous and, oftener than not, abstruse. Messrs. Blanks and Vidal (the latter also a member of the committee) will present a 15-minute discussion of the plans of this committee—the way it proposes to tackle the job, the nature of the report it hopes to prepare on this subject of almost universal interest in the field of concrete.

MEMORANDA

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7 p. m., Wednesday

34th Annual Dinner

DEAN MELVIN L. ENGER, College of Engineering, University of Illinois, will be Toastmaster.

PRESIDENT J. C. PEARSON will award:

The Leonard C. Wason Medal "for the most meritorious paper in A. C. I. Proceedings Vol. 33, 1937" to R. B. YOUNG for his "Concrete: Its Maintenance and Repair";

and the Leonard C. Wason Research Medal for "noteworthy research reported to the Institute in Proceedings Vol. 33, 1937," to F. E. RICHART and TILFORD A. OLSON, for their "Rapid and Long-Time Tests of Reinforced Concrete Knee Frames."

Then there will be music and song and two short addresses by:

FRANK T. SHEETS, President, Portland Cement Association: "A Challenge—Shorten the Lag between Research and Practice."

WILLIAM J. CAMERON, of the Ford Motor Co., known by his nation-wide broadcasts on the "Ford Sunday Evening Hour", will speak on: "Democracy—Does it Mean Anything?"

9:30 a. m., Thursday

Concrete Research

An open meeting of A. C. I. Committee 115,

M. O. WITHEY, Chairman, INGE LYSE, Secretary

Last year's open session of this Committee was such a success that the event will be repeated with a change of program style. Here is an opportunity to learn of the developments in concrete technology before they get to the publication stage. This is a meeting of, by and for research men, but others will be welcome. A selected group of twelve 10-minute papers covering a wide range of subject matter will be presented. The subject matter of the meeting is presented confidentially—there will be no published record of the session except as contributors specifically release their papers to the Institute.

2 p. m., Thursday

CHAIRMAN

VICE PRESIDENT F. E. RICHART

Studies of Sulphate Resistance of Cement and Concrete

THOMAS E. STANTON, JR.
Materials and Research Engineer

AND

LESTER C. MEDER

Assistant Physical Testing Engineer, Both of California, Division of Highways

For more than three years the Materials and Research Department of the California Division of Highways has been studying the comparative resistance of concretes (made from California commercial cements of different chemical compositions) to disintegration in the presence of an alkali soil high in sodium and magnesium sulphates. The paper will bring out the importance of the density of the concrete as an aid in durability under these special exposures, possibly to the extent of being more important than the composition of the cement itself. The outstanding features of the paper will be presented at the convention and the document is scheduled for publication in the March-April JOURNAL.

Properties of Concrete Silo Staves

D. G. MILLER

Senior Drainage Engineer, U. S. Department of Agriculture, University Farm, St. Paul, Minn.

Mr. Miller has been making a field investigation of silos with special reference to concrete stave silos and his paper, which grows out of this study, will take up the effects of weathering and silage action on low quality staves. It will develop the conclusion that few exact data exist regarding factors which influence durability of concrete stave silos. Test data will be presented on experimental staves made up at eight commercial plants in the summer of 1937; the effects of mix, (number of staves per bag of cement), tamping (the number of tamps per stave), water cement ratio and aggregate grading. The paper sets forth the ground work of the study to be started under the Institute's new Committee 714 under Prof. C. A. Hughes, University of Minnesota, assigned to prepare recommended practice for the manufacture of concrete staves and the construction of concrete stave silos.

The Action of Sulphate Solutions on Steam-Cured Composite Cement Mortars

T. THORVALDSON

Professor of Chemistry, University of Saskatchewan, Saskatoon

AND

D. WOLOCZOW

Associate Research Chemist, National Research Council of Canada, Ottawa

The paper, on which Doctor Thorvaldson will base the convention presentation of this subject is in print in the January-February JOURNAL. For the convention he will discuss the implications of the study and what they may mean in terms of practice.

Concrete Curing Compounds

H. S. MEISSNER AND S. E. SMITH

Bureau of Reclamation, Denver, Colo.

Presenting the results of studies by the Bureau of Reclamation.

MEMORANDA

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8 p. m., Thursday

CHAIRMAN

PAST PRESIDENT ARTHUR R. LORD

Rigid Frame Design

GEORGE A. MANEY

*Professor of Structural Engineering, Northwestern University,
Evanston, Ill.*

Professor Maney will discuss: "Should the method of analysis be determined by the type of rigid frame to be designed?" He will review some methods of design now in use and indicate the type of structure to which they are particularly adapted.

Rigid Frame Bridges

W. M. WILSON

*Research Professor of Structural Engineering, University of
Illinois, Urbana*

AND

RALPH W. KLUGE

University of Illinois

The paper will report results of an investigation at the University of Illinois, made in cooperation with the Portland Cement Association, which will supply a tie between theory and practice for which designing engineers have been looking.

Reinforced Concrete Design Practice

ALBERT SMITH

Smith & Brown, Engineers, Inc., Chicago

The Institute's building regulations for reinforced concrete are in for a good deal of attention. In addition to approximately a half session for a hearing on specific proposed changes in the code, at the Tuesday evening session, the matter of reinforced concrete design, as set up in the code is being studied generally from another angle. Mr. Smith submitted to a considerable group of Chicago engineers and contractors the following questions: (A) Are there any important design and construction considerations omitted from the code which should and could be included? (B) Are any of the provisions of the code either too lax or too severe? The result of those questions was a meeting December 28 attended by 20 consulting engineers. Discussion was free and vigorous. It went into matters in regard to footings, vertical steel in tied and spiral columns, welded stirrups, re-entrant angles in concrete, shrinkage, etc. Mr. Smith's paper grows out of that discussion.

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Information as to Institute membership and publications
on request at Convention Registration Desk or of

Secretary, American Concrete Institute

408 NEW CENTER BLDG.

7400 SECOND BOULEVARD

DETROIT