
Inventory of the Raymond E. Davis Papers, 1931-1956

Collection number: DAVIS

The Water Resources Center Archives

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Contact Information:

- Water Resources Center Archives
- 410 O'Brien Hall
- University of California, Berkeley
- Berkeley, California, 94720-1718
- Phone: (510) 642-2666
- Fax: (510) 642-9143
- Email: waterarc@library.berkeley.edu
- URL: <http://www.lib.berkeley.edu/WRCA>

Processed by:

Randal Brandt

Date Completed:

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Encoded by:

Xiuzhi Zhou

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Descriptive Summary

Title: Raymond E. Davis Papers,

Date (inclusive): 1931-1956

Collection number: DAVIS

Creator: Davis, Raymond Earl, 1885-1970

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Repository: Water Resources Center Archives (Calif.)

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Language: English

Access

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Preferred Citation

Access Points

Concrete --Testing.

Concrete --Permeability.

Cement --Testing.

Concrete dams --Design and construction.

Hydrostatic pressure.

Hoover Dam (Ariz. and Nev.)

Colorado River Aqueduct (Calif.)

Barker Dam (Colo.)

Williams Dam (Ariz.)

Norris Dam (Tenn.)

Hiwassee Dam (N.C.)

Pine Flat Dam (Calif.)

Sariyar Dam (Turkey)

Biographical Information

Raymond Earl Davis was born in Gorham, Maine, on June 13, 1885, the son of Charles and Elizabeth Gray Davis. His interests in civil engineering projects were deep rooted at an early age so that even before completing his basic engineering education he spent several years in the field as a topographer and engineering inspector. Returning to the University of Maine, he received his B.S. in 1911 and C.E. in 1914. During 1911 through 1917 he became interested in teaching and served as Instructor and Associate in Civil Engineering at the University of Illinois, where he received his M.S. in 1916. This activity was interrupted by World War I, during which he was a first lieutenant, Engineering Corps, serving as Assistant to the Department Engineer, Western Department, in charge of collecting and compiling data for the War Department. When the war ended he resumed his career in teaching, serving for the next two years as Associate Professor of Civil Engineering at the University of Nebraska.

His first association with the University of California began in 1920, where his keen interest in the properties of engineering materials soon resulted in his appointment as Director of the then small Engineering Materials Laboratory, and as Professor of Civil Engineering.

Professor Davis was a leading researcher in the field of engineering materials and structures. Although he supervised many important structural research projects such as, (a) the large model studies of the proposed San Francisco-Oakland Bridge to evaluate its engineering characteristics; (b) tension studies of very heavy riveted joints for long span bridges; and (c) stability studies of rock-fill dams during earthquakes; and many others, his principal interests were in the field of cement and concrete, where he was preeminent both as a researcher and a consultant. He was always extremely active in advancing the work of his profession, serving on many important committees of the American Society for Testing and Materials as well as the American Concrete Institute, frequently as chairman. He also served as president of the latter organization.

Among the many studies on concrete which he pioneered and for which he won acclaim are (a) volume changes and creep, or plastic flow of concrete under sustained loads; and (b) the use of pozzolans as a partial replacement of part of the cement in concrete mixes.

Professor Davis' knowledge in connection with cement and concrete resulted in his advice being sought by many large private and governmental organizations, such as the Corps of Engineers, the Bureau of Reclamation, and the Metropolitan Water District of Southern California, in connection with Hoover Dam, Grand Coulee Dam, Colorado River Aqueduct, the San Francisco-Oakland Bay Bridge, and many other projects. He directed several research projects concerned with engineering materials and structures during World War II.

Under the direction of Professor Davis, the Engineering Materials Laboratory developed into one of the most important of its type in the world. In 1969 this laboratory was greatly enlarged for a second time and named Raymond Earl Davis Hall.

Although he retired from his academic duties in 1952, he continued his active participation in technical society matters and his consulting activities until his death.

Raymond Earl Davis died on June 14, 1970, in Berkeley, one day after his eighty-fifth birthday.

Excerpted from *In Memoriam*, by G. E. Troxell, H. E. Davis, and J. W. Kelly.

Scope and Content

Published and unpublished reports, correspondence, photographs, etc., primarily dealing with concrete testing for various dams in the U.S. and Turkey.

Box Box 1, item **Davis, Raymond E.**

Contract between the United States and the University of California providing for laboratory tests in connection with concrete research work for Hoover Dam, 1931-1933.

item 2 **Davis, Raymond E.**

Outline of proposed program of investigation of concrete problems for the Colorado River Aqueduct. 1932.

item 3 **Davis, Raymond E.**

Work in progress in the testing laboratory at Banning. 1934.

item 4 **Davis, Raymond E.**

Portland cement, 1934.

item 5 **Davis, Raymond E.**

Manual of instructions for construction inspectors : (tentative). 1934.

item 6

Tuthill, Lewis H.

Test of proposed joint between conduit invert and side wall. [Los Angeles] : Metropolitan Water District of Southern California, 1933.

item 7

Davis, Raymond E.

Cement investigation : synopsis of test program. 1934.

item 8

Davis, Raymond E.

Cement investigation : details of test program. 1934.

item 9

Davis, Raymond E.

Cement investigation : details of test program. [Los Angeles] : Metropolitan Water District of Southern California, 1934.

Scope and Content Note

Series title: Report (Metropolitan Water District of Southern California) ; no. 614. WRCA has another copy: G421 W no.614

item 10

Davis, Raymond E.

Concrete investigation : details of test program. 1934.

item 11

Davis, Raymond E.

Cement and concrete tests : laboratory and field organization and equipment. 1934.

item 12

Davis, Raymond E.

Cement and concrete investigations : estimate of cost. 1934.

item 13

Davis, Raymond E.

Report on concrete inspection. 1935.

item 14

Davis, Raymond E.

[All-American Canal, station 90 : construction materials], 1935.

item 15

Davis, Raymond E.

Proposed specifications for portland-puzzolan cement. 1936.

- item 16 **Metropolitan Water District of Southern California**
Concrete and cement investigations. 1934.
- Scope and Content Note**
- Includes memorandum to Davis from Lewis H. Tuthill.
-
- item 17 **Metropolitan Water District of Southern California.**
Colorado River Aqueduct / Frank E. Weymouth, General Manager and Chief Engineer ; [drawn by] V. Meyer. Los Angeles, Calif., [1935].
- Physical Description:** 1 map
- Scope and Content Note**
- WRCA has another copy: mG42101 F8 1935
-
- item 18 **Specification for construction of Barker Reservoir Dam. [1910?].**
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- item 19 **Jansen, E. Clinton.**
Comments on "Report on repairs to Barker Dam" by Transmission & Station Engineering Department. 1943.
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- item 20 **Davis, Raymond E.**
Preliminary report to Public Service Company of Colorado, Denver, Colorado on proposed repairs to Barker Dam. 1943.
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- item 21 **Davis, Raymond E.**
Report to Public Service Company of Colorado, Denver, Colorado on proposed repairs to Barker Dam. 1944.
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- item 22 **Jansen, E. Clinton.**
Unwatering for Barker Dam repairs. 1945.
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- item 23 **Jansen, E. Clinton.**
Estimated loss of Boulder hydro generation during repairs to Barker Dam. 1945.
-
- item 24 **Davis, Raymond E., E. Clinton Jansen, and W.T. Neelands**
Restoration of Barker Dam. 1947.
-
- item 25 **Proposed schedule of repairs based upon reinstallation of old gates in new outlet tower : Barker Dam. 1947.**
-
- item 26 **Davis, Raymond E., and W.T. Neelands**
Report to Public Service Company of Colorado, Denver, Colorado, on repairs to Barker Dam. Berkeley, Calif. : R.E. Davis, [1947].
-
- item 27 **Davenport, George L.**
Report on proposed completion of waterproofing with protection of upstream and downstream faces of the masonry dam at Williams, Arizona : also, Alternate plans for increasing storage capacity by raising dam. [1940].
-
- item 28 **Davis, Raymond E.**
Williams Dam, Arizona, 1939-1940.
- Physical Description:** 48 photographs, in 2 albums : b&w.
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- item 29 **McHenry, Douglas.**
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- Partial study of stresses at base of block 40 : Norris Dam / by Douglas McHenry. [Knoxville, Tenn.] : Tennessee Valley Authority, Engineering Construction Dept., [1937].**
- item 30 **Measurements of the structural behavior of Norris Dam. Knoxville, Tenn. : Tennessee Valley Authority, Design Dept., [1941].**
- Scope and Content Note**
- Series title: Technical monograph (Tennessee Valley Authority) ; no. 53.
- item 31 **Norris Dam / [prepared by the Division of Information, Tennessee Valley Authority]. Washington, D.C. : U.S. G.P.O., 1936.**
- item 32 **Carlson, Roy W., and Raymond E. Davis**
Report to Tennessee Valley Authority, Knoxville, Tennessee on problems pertaining to the concrete for Hiwassee Dam. 1938.
- item 33 **Davis, Raymond E.**
Thermal stress tests : outline of proposed cooperative investigations and estimate of cost. 1938.
- item 34 **Davis, Harmer E.**
Letter to T. B. Parker, Chief Engineer, Tennessee Valley Authority re status of thermal stress tests being conducted at the University of California for TVA, 24 Feb. 1941.
- Scope and Content Note**
- Includes blueprints.
- item 35 **Davis, Raymond E.**
Report to Tennessee Valley Authority on thermal stress tests for Hiwassee Dam. Berkeley, Calif. : Engineering Materials Laboratory, University of California, [1942].
- item 36 **Carlson, Roy W., and Raymond E. Davis**
Preliminary test program for study of uplift pressure in dams. 1949.
- item 37 **Thomas, J. I.**
Memorandum of conference held at the University of California 19 April 1949 to discuss requirements for instrumentation for Pine Flat Dam. 1949.
- item 38 **Powers, T. C.**
Hydrostatic pressure in concrete. 1949.
- item 39 **Empirical measurement of uplift under dams : preliminary report. Vicksburg, Miss. : Corps of Engineers, U.S. Army, Waterways Experiment Station, [1949].**
- item 40 **Davis, Raymond E.**
Report to Office of Chief of Engineers, Department of the Army, Washington, D.C. on exploratory tests for study of uplift pressure in dams. 1949.
- item 41 **Carlson, Roy W.**
Determination of area over which pore pressure acts in concrete. 1949.
- item 42 **Carlson, Roy W.**
Memorandum on equations for strain due to pore pressure : for Office of Chief of Engineers, U.S. Army. 1949.
- item 43 **Davis, Raymond E.**
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- Uplift pressures and their effect upon strains. 1949.**
- item 44 **Davis, Raymond E.**
 Mass concrete investigations at Clinton. 1950.
- item 45 **Carlson, Roy W.**
 Report to Office of the Chief of Engineers on permeability, pore pressure and uplift in gravity dams. 1951.
- item 46 **Davis, Raymond E.**
 Report on problem of crack formation and outline of proposed investigation. 1934.
- item 47 **United States. Army. Engineer District, Portland.**
 Columbia River and tributaries critical power period : system operation major phase C projects : system prime capability=7,480,000 kw. [Portland, Or.] : Dept. of the Army, Corps of Engineers, [193-?]. Contents: sheet no. 1. August 1929-November 1930 -- sheet no. 2. December 1930-March 1932.
- item 48 **Dams of Prepakt concrete. Chicago : The Prepakt Concrete Company, [1946].**
- item 49 **Davis, Raymond E.**
 Preliminary report to International Engineering Company, Inc., San Francisco, California on tests on 1-foot model of Sariyar rock-fill dam. 1949.
- item 50 **Davis, Raymond E.**
 Report to International Engineering Company, Inc., San Francisco, California on tests on models of Sariyar rock-fill dam. Berkeley, Calif. : Engineering Materials Laboratory, University of California, 1949.
- item 51 **Davis, Raymond E.**
 Report to International Engineering Company, Inc., San Francisco, California on earthquake tests on models of rock-fill dams. Berkeley, Calif. : Engineering Materials Laboratory, University of California, 1952.
- item 52 **Davis, Raymond E.**
 Letter report to A.E. Margolin and Massman Construction Company, Kansas City, Missouri [on] Warrior River Lock, Eutaw, Alabama, coarse aggregates. 1956.
- item 53 **Burt, R. L.**
 Tests of Bermuda grass channel linings. Washington, D.C. : U.S. Dept. of Agriculture, Soil Conservation Service, [1939].
- item 54 **Mississippi River Commission**
 [Tables of discharges up to 1,300,000 c.f.s. for rising river conditions, 1932 to 1939, Mississippi River]. 1939.