Finding aid to the William W. Helbush collection of water project records, 1905-1947, MS 980

Finding aid prepared by Frances W. Kaplan.
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2012
Title: William W. Helbush collection of water project records
Date: 1905-1947
Collection Identifier: MS 980
Creator: Helbush, William W.
Extent: 20 boxes and 3 oversize boxes (11.5 linear feet)
Contributing Institution: California Historical Society
678 Mission Street
San Francisco, CA, 94105-4014
(415) 357-1848
reference@calhist.org
URL: http://www.californiahistoricalsociety.org/
Location of Materials: Collection is stored onsite.
Language of Materials: Collection materials are in English.
Abstract: The collection consists of primary and secondary source materials collected by William Helbush in his position as engineer for the San Francisco Department of Public Works. The collection contains project records, including reports, contracts, notes, specifications, plans, blueprints, and site photographs, as well as administrative records, financial records, and reference material related to the design and construction of various water projects, most notably the Hetch Hetchy water supply project, the enlargement of O'Shaughnessy Dam, and the Richmond-Sunset sewage treatment plant and reservoir for the San Francisco Water Department. Many of the records collected by Helbush were created by or for Michael M. O'Shaughnessy, City Engineer for San Francisco and Chief Engineer of the Hetch Hetchy Project; and Ray L. Allin and Paul J. Ost, engineers for the San Francisco Department of Public Works. A small number of Helbush's personal papers can be found in the collection.
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Preferred Citation
[Identification of item], William W. Helbush collection of water project records, MS 980, California Historical Society.
System of Arrangement
The collection is arranged into three series: 1) Hetch Hetchy water supply project records; 2) Other water project records; and 3) Research and reference materials. Other water project records (Series 2) contain records for water projects other than Hetch Hetchy.
Processing Information
The collection was reprocessed by Frances W. Kaplan in 2012.
Historical Note
William W. Helbush (circa 1895-1965) served as an engineer for the San Francisco Department of Public Works. During the 1930s he worked on the Hetch Hetchy project (1914-1934) and the enlargement of O'Shaughnessy Dam in Yosemite Valley (1934-1938). Among his known accomplishments was the design of the radial gates of the new spillway at the south abutment of O'Shaughnessy Dam. Helbush collected reference materials, notes, and records for a number of water projects, but the extent of his role in the plan and design of projects represented in the collection is unknown.
The Hetch Hetchy water supply and hydroelectric power system is a gravity driven network of dams, reservoirs, railroads, aqueducts, pipelines, power plants, and tunnels that delivers drinking water from Yosemite National Park to San Francisco and the Bay Area. Hetch Hetchy Valley and the Tuolumne River had been recommended as a water source for the City of San Francisco as early as a 1901, but it was not until the Raker Act of 1913 that the City of San Francisco was granted the right to dam the Hetch Hetchy Valley as a reservoir and use public lands to construct projects necessary for the development of a water and power supply system from the Sierras to San Francisco. Started in 1914 and completed in 1934,
the Hetch Hetchy project succeeded in providing water to people in San Francisco, Santa Clara, Alameda, and San Mateo counties. Since then, the Hetch Hetchy water supply system has undergone various upgrades, replacements, additions, and seismic retrofits.

Administration of San Francisco’s water supply system has been governed by various corporate and municipal bodies. In 1900 the San Francisco Department of Public Works, called the Board of Public Works, was created and charged with studying possible ways to supply San Francisco with drinking water. In 1930 San Francisco purchased the Spring Valley Water Company, a private enterprise that had been supplying water to San Francisco since 1858. The San Francisco Water Department was then formed under the Board of Public Works. In 1932, the Charter of the City and County of San Francisco created the San Francisco Public Utilities Commission (SFPUC). The SFPUC was responsible for the construction, management, supervision, operation, and control of all public utilities that served the City and County of San Francisco and its inhabitants. Upon its completion in 1934, the Hetch Hetchy project, formerly an independent department under the San Francisco Public Utilities Commission, became part of the San Francisco Water Department.

Scope and Contents
The collection consists of primary and secondary source materials collected by William (Bill) Helbush in his position as engineer for the San Francisco Department of Public Works. The collection contains project records, including reports, contracts, notes, specifications, plans, blueprints, and site photographs, as well as administrative records, financial records, and reference material related to the design and construction of various water projects, notably the Hetch Hetchy water supply project, the enlargement of O'Shaughnessy Dam, and the Richmond-Sunset sewage treatment plant and reservoir for the San Francisco Water Department. A small number of Helbush's personal papers can be found in the collection.

The bulk of the collection comprises engineering records and blueprints related to the design, plan, and construction of the Hetch Hetchy water supply system, a massive public works project undertaken by the City of San Francisco. Consisting of a series of dams, tunnels, railroads, and powerhouses, the Hetch Hetchy project (1914-1934) provided the city and its surrounding areas with a longterm water supply. The collection also includes records and blueprints for the enlargement of O'Shaughnessy Dam (1934-1938), a renovation project funded in part by the Public Works Administration that raised O'Shaughnessy Dam by eighty-six feet.

Other records in the collection relate to water and power projects both within the United States and overseas. These include the Bucks Creek power house in Feather River Canyon, California; Moffat Tunnel in Colorado; the Mokelumne River power development for the City of Lodi, California; Boulder Dam (Hoover Dam) on the Colorado River; and Madden Dam in Panama. Reference materials collected by Helbush include engineering manuals, handbooks, catalogs, articles, and bulletins.

Many of the records collected by Helbush were created by or for Michael M. O'Shaughnessy, City Engineer for San Francisco and Chief Engineer of the Hetch Hetchy Project; and Ray L. Allin and Paul J. Ost, engineers for the San Francisco Department of Public Works.

Indexing Terms
The following terms have been used to index the description of this collection in the library's online public access catalog:
- Hetch Hetchy Reservoir (Calif.)
- Water-supply--California--San Francisco.
- Dams--Design and construction.
- Municipal engineering--California--San Francisco.
- Civil engineers--California--San Francisco.
- Helbush, William W.
- O'Shaughnessy, M. M. (Michael Maurice), 1864-1934.
- Allin, Ray L.
- Ost, Paul J.
- San Francisco (Calif.). Water Dept.
- San Francisco (Calif.). Dept. of Public Works.
- San Francisco Public Utilities Commission.
- Blueprints.
- Contract documents.
- Contract drawings.
- Engineering drawings.
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Hetch Hetchy water supply project blueprints 1926-1929

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Proposed standby reservoirs in San Francisco (Amazon, Balboa Park, and Glen Park reservoir) 1926-1930

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Extent: 3 boxes, 4 oversize folders
System of Arrangement
Other water project records (Series 2) are arranged in chronological order by project.

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Box 15, Folder 9 San Francisco Water Department Specification No. 120 for the Construction of Concrete Lining, Roof and Control Works for Sunset Reservoir (Federal Public Works Docket 1510-2C) 1937
Box 16, Folder 1 Specifications for the Construction of Richmond Connecting Sewer between Proposed Richmond-Sunset Sewage Treatment Plant and Forty-First Avenue and Fulton Street (Specifications No. 19,024), City and County of San Francisco 1937
Box 16, Folder 2 Specifications for the Construction of the Richmond-Sunset Sewage Treatment Plant (Specifications No. 19,033), City and County of San Francisco 1937
Box 16, Folder 3 Specifications for the Construction of the Primary Digester and Miscellaneous Equipment for the Richmond-Sunset Sewage Treatment Plant (Specifications No. 19,110), City and County of San Francisco 1938
Box 16, Folder 4 Final Report (Personnel) for the Construction of the Richmond Sewer Tunnel and Appurtenances (Specification No. 18,942), City and County of San Francisco 1938

Series 3: Research and reference materials 1905-1938

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System of Arrangement
Research and references materials (Series 3) are arranged in chronological order.

Box 17, Folder 1 Department of the Interior, United States Reclamation Service, Roosevelt Dam sluicing gate drawings, Numbers 1-44, Salt River Project, Arizona 1905-1906
Box 17, Folder 2 Department of the Interior, United States Geological Survey, Reclamation Service contract specifications and proposals for water projects 1906-1909
Box 17, Folder 3  "A Modern Steam Power Central Station," reprinted from the *Journal of Electricity, Power and Gas*, San Francisco 1907-1908
Box 17, Folder 4  Notes on foundations 1908
Box 17, Folder 5  Department of the Interior, United States Reclamation Service specifications and proposals for water projects 1910-1912
Box 17, Folder 6  Department of the Interior, United States Reclamation Service specifications and proposals for water projects 1913-1915
Box 17, Folder 7  *Engineering News* journals and articles 1913-1930
Box 18  Department of the Interior, United Stated Geological Survey, Professional Paper 86, "The Transportation of Debris By Running Water" by Grove Carl Gilbert 1914
Box 17, Folder 8  Cambria Steel handbook with annotations by William Helbush 1914
Box 17, Folder 9  United States Statutes at Large, Public Acts of the Sixty-Third Congress (Raker Act) 1913-1914
Box 19, Folder 1  Department of the Interior, United States Reclamation Service specifications and proposals for water projects 1915-1916
Box 19, Folder 2  Articles and notes on concrete 1915-1938
Box 19, Folder 3  General Electric Company motor pricebook 1916
Box 19, Folder 4  American International Shipbuilding Corporation diagrams and index to standards 1918-1919
Box 19, Folder 5  Worthington Pump and Machinery Corporation publications 1918-1921
Box 19, Folder 6  Blaw-Knox Company *Transmission Towers* 1920
Box 19, Folder 7  State of California, Department of Public Works, Division of Engineering and Irrigation, bulletins nos. 1 and 2 1921-1922
Box 19, Folder 8  State of California, Department of Public Works, Division of Water Rights rules and regulations governing the appropriation of water in California 1921-1922
Box 19, Folder 9  The M.W. Kellogg Company publications on high pressure hydraulic pipe lines and high pressure and high temperature piping 1921-1924
Box 19, Folder 10  Engineering bulletins on steel strength 1926-1927, 1941
Box 19, Folder 11  Miscellaneous engineering publications 1926-1944
Box 19, Folder 12  The American Institute of Mining and Metallurgical Engineers, technical publication no. 33, *Commercial Forms and Applications of Aluminum and Aluminum Alloys* 1927
Box 19, Folder 13  River Murray Waters Act *Hume Reservoir*, Australia 1928
Box 20, Folder 1  The American Society of Mechanical Engineers articles 1928-1929
Box 20, Folder 2  A.O. Smith Corporation bulletins 1929
Box 20, Folder 3  Department of Public Works, Bureau of Engineering, *Standard Specifications* 1929
Box 20, Folder 4  Articles and bulletins on cement 1929-1938
Box 20, Folder 5  Department of Metallurgy and Research, National Tube Company, Research Bulletin No. 10-A on soil corrosion May 1930
Box 20, Folder 6  Department of Public Works annual report, pages 47-48 1930
Box 20, Folder 7  *Wire Engineering*, vol. 1, no. 3, and vol. 1, no. 5 1931
Box 20, Folder 8  City of Tacoma Department of Public Utilities specifications for horizontal pumps for Hood St. booster station 1931
Box 20, Folder 9  *The Irrepressible Conflict, Business vs. Finance* by David Cushman Coyle 1932
Box 20, Folder 10  Federal Emergency Administration of Public Works executive orders 1933
Box 20, Folder 11  The Paraffine Companies, Inc. correspondence and specifications for Pabco pipe coverings 1933
Box 20, Folder 12  *Compressed Air Magazine*, vol. 38, no. 4 1933
Box 20, Folder 13  United States Department of the Interior, Bureau of Reclamation memorandum on cooling studies for Hoover Dam 1933
Box 20, Folder 14  United States Department of the Interior, Bureau of Reclamation technical memorandum No. 341 on the cooling of concrete in Boulder Dam 1933
Box 20, Folder 15  Portland Cement Association manuals 1935-1938
Box 20, Folder 16  International Filter Co., *Water Softening and Filtration Plants* catalog for water purification equipment undated
Box 20, Folder 17  *Theoretical Analysis of Arch Dams,* chapter XXII undated
Box 20, Folder 18  *American Pipe Manual* by American Cast Iron Pipe Co., Birmingham Alabama undated
Box 20, Folder 19  Vixen Tool Company slide wheel undated