

Fitzsimons General Hospital, Water Storage Tank
(Fitzsimons General Hospital, Building 239)
North Cooper Street and East McCloskey Avenue
Aurora
Adams County
Colorado

HABS No. CO-172-B

HABS
COLO
1-AUR,
2B-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
Intermountain Support Office - Denver
National Park Service
P.O. Box 25287
Denver, Colorado 80225-0287

HISTORIC AMERICAN BUILDINGS SURVEY
FITZSIMONS GENERAL HOSPITAL, WATER STORAGE TANK
(FITZSIMONS GENERAL HOSPITAL, BUILDING 239)

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For information about other structures at the Fitzsimons General Hospital, see:

HABS No. CO-172-A	Fitzsimons General Hospital, Building 230
HABS No. CO-172-C	Fitzsimons General Hospital, Building 253
HABS No. CO-172-D	Fitzsimons General Hospital, Building 254
HABS No. CO-172-E	Fitzsimons General Hospital, Building 255
HABS No. CO-172-F	Fitzsimons General Hospital, Building 256
HABS No. CO-172-G	Fitzsimons General Hospital, Building 257

Location:	North Cooper Street and East McCloskey Avenue Aurora Adams County Colorado
USGS 7.5 Minute Quad:	Fitzsimons, Colorado 1980
UTM Coordinates:	Water Storage Tank 13/2187680/698170
Date of Construction:	1939
Present Owner:	U.S. Army
Significance:	The Water Storage Tank, Building 239, supplied water to Fitzsimons General Hospital from 1939 to 1993. Built as a Public Works Administration project, the tank replaced an earlier smaller tank and has been a strong visual element in the landscape for over 50 years.
Historian:	Joe C. Freeman, August 1994 Joe C. Freeman, AIA, Architect

PHYSICAL HISTORY

Building 239, an elevated water storage tank, is located near the service and warehouse area at the corner of North Cooper Street and East McCloskey Avenue of the Fitzsimons General Hospital complex in Aurora, Colorado. Situated to the northwest of the center of the facility, the structure was built to serve the water needs of the installation, especially the 1940s expansion of the Fitzsimons General Hospital. The structure is owned by the U.S. Government and is not in active use. Building 239 is located on the Site Sketch Map on page 7.

Building 239 derives its significance from its association with and support of the military and medical missions of Fitzsimons General Hospital. Additionally, Building 239 may be associated with the development of large scale water distribution and storage facility design. Architecturally complete and virtually unaltered since its original construction, Building 239 retains distinctive features of style and identity, engineering technology, materials, and setting. Building 239 is functionally designed and represents the engineering technology available and in common use in 1939. The property has been determined eligible for inclusion in the National Register of Historic Places under criterion C.

Built in July 1939, Building 239 was built as a replacement for a smaller 75,000 gallon water storage tank that was a part of the initial installation construction. The Cultural Resources Study, Fitzsimons Army Medical Center, completed in 1991 by Front Range Research Associates, Inc., lists the structure as contributing to the Fitzsimons National Register Historic District.

HISTORICAL CONTEXT

The historical and architectural contexts of Building 239 are associated with the military/medical mission of the Fitzsimons General Hospital as they developed and evolved in the 1930s and 1940s. The Cultural Resources Study, Fitzsimons Army Medical Center, completed in 1991 by Front Range Research Associates, Inc.,

identifies specific contexts with which Building 239 may be associated. The contexts include: Improvement and Expansion: 1935-1938; Mobilization and Entrance into World War II: 1939-1941; and Wartime Activities and Expansion: 1942-1945. All of the contexts represent significant periods of historical importance in the life of the post. Building 239's Statement of Significance puts the structure in a supporting role to the post's primary medical mission and stresses its role in providing an adequate water supply for the development and expansion of the installation. Building 239 was a vital element in supplying water and adequate water pressure to serve the high water use that medical facilities required.

Water storage and distribution has been a concern in Colorado and throughout the arid west since Spanish settlement in the eighteenth century and the intense settlement brought on by American westward expansion in the nineteenth century. Spanish water systems, primarily acequia systems that distributed surface water for domestic and agricultural uses were followed by shallow wells and eventually deep wells combined with pumping systems, elevated water storage structures that provided static head water pressure, and pipe distribution systems. Due to the generally arid climate, seasonally variable levels of precipitation, and cyclical droughts, water supply for expanding population centers was erratic. Water was a commodity that had political and economic implications.

The growth of large population centers in the west required large amounts of water, reliable storage facilities, and a distribution system that could deliver water, under pressure, on demand. Fitzsimons General Hospital, established on the eastern edge of the City of Denver near the end of World War I, got its water from the City of Denver. Denver understood the political and economic benefits of having a military facility nearby and, like other communities that sought government installations, offered assistance in the form of land and the extension of utilities. However, long after Fitzsimons had been established, the storage, distribution, and cost of water would continue to be a concern.

Water was supplied to the Fitzsimons General Hospital through 12" and 16" water mains from the City of Denver's water system. Although it is assumed that Fitzsimons paid the City of Denver for the water, further research may indicate the exact nature of the financial arrangements. The water was pumped by the Fitzsimons Pumping Station (Building 13) to an elevated water storage tank that

provided storage and static head pressure for the installation's water distribution system. The original water storage tank, 75,000 gallons capacity, although adequate for the supply of drinking water, could not supply the volume of water needed for irrigation of the grounds. Consequently, a 1,200,000 gallon underground reservoir was constructed by the installation along with deep water wells to supply it.

Directorate of Public Works' records indicate that the water supply issue was ever in the forefront of maintenance and operations considerations at Fitzsimons. The problem was that Fitzsimons' water supply was at the mercy of Denver's water supply. Erratic water supply from the City of Denver was caused by normal drought and seasonal cycles as well as technical problems. With the planned construction of a new and larger hospital facility in the late 1930s, it was judged that a new and larger water storage tank was required that was tall enough to develop adequate water pressure to supply the upper floors of the new hospital building.

Designed by the U. S. Army Quartermaster Corps (Standard Plan 6272-600), an elevated water tank was constructed by the Federal Public Works Administration (PWA) in 1939. The tank had a 150,000 gallon capacity and was about 200 feet tall. At the time of the water tank's construction Fitzsimons General Hospital, and other military installations in the United States, had begun to rely on Federal Works programs to augment expansion of military installations on account of the prospect of war. Under the arrangement, Federal Works programs supplied labor while the installations provided materials and management through the Quartermaster Corps and the Office of the Post Engineer.

From 1939 to 1993, the water storage tank served the needs of the installation as a component of Fitzsimons' water system. Over the years the tank has deteriorated due to normal corrosion and exposure. It was determined by the installation that adequate water pressure could be maintained without the need for gravity-based, static-head pressure and the associated "water hammering" that was a result of having both a pumping system and a water tower.

CONDITION

Building 239 is in sound structural condition with unrepairable deterioration to its tank, piping, and interfaces with later water supply systems.

DESCRIPTION

Building 239 is an elevated water storage tank. Constructed of steel, the tank is cylindrical in shape and is supported by 6 steel legs anchored to heavy concrete piers. The piers are pyramidal having a base dimension of 9'-9" square, a height of 8'-6", and a 3'-10" square top. The piers are set below grade with about 1'-4" of concrete exposed above grade. Centered in the top of each pier is an anchor bolt that exceeds 2" in diameter.

The anchor bolt anchors a flat steel plate, set on a grout leveling bed. A complex base plate assembly with riveted connections supports each tower leg and connectors for the diagonal tie rods which extend between the legs. Each leg is constructed of 2 heavy steel channels (12 [25) tied and spaced apart with diagonal strut bracing. Built in vertical lifts of about 34', the tower is divided vertically by horizontal structural elements also constructed of steel channels tied and spaced with small diagonal struts 7 [9.8 and 6 [8.2). The tower supports, which are spaced equally along the circumference of the tower's base, angle inward and rise from a diameter of 62'-1 1/2" at the tower's base to a diameter of about 34' along the tank's circumference. Tie-rods extend diagonally between the legs at each of the 5 vertical lifts. The tie-rods are 1 5/8" in diameter at the base of the tower and 1 1/8" at the top.

The tank that sits atop the structure is a cylindrical vessel with a conical top and a spherical bottom. The tank is about 34' in diameter, about 17' tall, and is constructed of 5/16" thick steel plate. The top is constructed of 3/16" steel plate and the bottom is formed from 3/8" steel plate. All joints in the tank are welded. A 30" wide balcony with a low railing surrounds the tank and the conical top overhangs the walls of the tank. Atop the roof of the tank sits a steel platform for the mounting of light beacons. The beacon platform covers a 6" steel vent at the apex of the cone. A 5'-0" diameter steel cylinder extends from a central receiving pier up to the bottom of the tank. The cylinder acts as the standpipe for the tank and houses both water supply and distribution piping.

Extending almost 200'-0", the "water tower" is painted in alternating red and white horizontal bands in a checkerboard pattern due to its proximity to nearby airports.

PROJECT INFORMATION

Field work for Historic American Building Survey documentation of Building 239 at the Fitzsimons General Hospital, Aurora, Colorado was accomplished March and April 1994 at the direction of the Omaha District of the U.S. Army Corps of Engineers. Gulf Engineers and Consultants, Inc. of Baton Rouge, Louisiana was the prime contractor, Joe C. Freeman, AIA, Architect of Austin, Texas was the principal architectural investigator, and Bill Doty of Colorado Springs, Colorado was the photographer. Work was accomplished under Contract No. DACW45-92-D-0011, Delivery Order No. 0009. Mr. Bobby Roberts of the Directorate of Engineering & Housing was the on-site coordinator of the work at Fitzsimons.

Documentation of this structure was to mitigate the effects of its impending demolition. The structure is to be demolished in order to restructure the post's water system.

SOURCES OF INFORMATION

Architectural Drawings:

The Office of the Post Engineer, Directorate of Public Works, retains engineering drawings of Building 239. The Directorate of Public Works is located in Building 118. The drawings show both original construction and subsequent modifications. The Office of the Post Engineer, Directorate of Public Works, also has transparencies of the drawings.

Early Views:

The Directorate of Public Works provided photographic prints of Building 239 showing views of the building from various directions. The photographs were taken after the 1939 construction, probably around 1940. No photographer is listed.

Sources:

Simmons, R. Laurie, Cultural Resource Study, Fitzsimons Army Medical Center. Denver, Colorado: Front Range Research Associates, Inc., 1991.

True X Mag. _____
declination _____

Scale 1 cm = 122m.

