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Los Angeles Historic Resources Survey

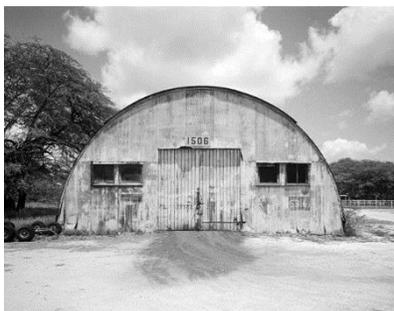
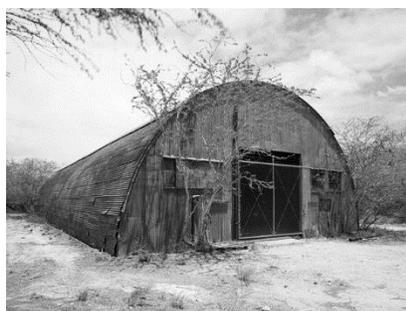
LOS ANGELES CITYWIDE HISTORIC CONTEXT STATEMENT

Context: Architecture and Engineering, 1850-1980

Sub-context: Engineering, 1900-1980

Theme: Technological Developments in Construction, 1900-1980

Sub-theme: The Quonset Hut, 1941-1965



Prepared for:

City of Los Angeles
Department of City Planning
Office of Historic Resources



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PREFACE

The sub-theme “The Quonset Hut, 1941-1969” is a component of Los Angeles’ citywide historic context statement and provides guidance to field surveyors in identifying and evaluating Quonset huts as potential historic resources. Refer to www.HistoricPlaces.org for information on designated resources associated with this theme as well as those identified through SurveyLA and other surveys.

CONTRIBUTORS

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INTRODUCTION

The sub-theme of “The Quonset Hut. 1941-1969” examines the design and development of this innovative and highly-versatile prefabricated building type, from its origins as the “Nissen hut” developed by the British Army during World War I, through various design improvements by the U.S. Navy during World War II and its rechristening as the Quonset hut, to its adaptive reuse as housing and other uses during the postwar years.

HISTORIC CONTEXT

The origins of the Quonset hut can be traced across the Atlantic and back to World War I, when the British Army began to experiment with manufacturing prefabricated structures for use during wartime campaigns. In 1916, Major Peter Norman Nissen of the Corps of Royal Engineers developed plans for a semi-cylindrical hut constructed of corrugated steel sheets placed atop arched steel framing. The design for the hut, which Nissen patented that year, proved particularly appealing due to its portability, ease and expediency of assembly, and economy of building materials. The functional flexibility of the “Nissen hut” allowed the British Army to adapt the hut to a multitude of uses.

Production of the Nissen hut declined in the years following World War I, but began again in earnest in 1939 when the United Kingdom declared war on Nazi Germany. As the United States contemplated its own entry into World War II in 1941, the United States Navy began to explore manufacturing a similar structure. Military officials realized that the Navy would soon have to face the problem of transporting and housing troops as well as storing large quantities of materials and resources. In early 1941, the military looked at the Nissen hut as a possible solution, but felt the design could be improved.¹ The architectural firm of George A. Fuller and Company was engaged by the Navy to study the problem and prepare a hut designed specifically to American specifications.

¹ “Quonset Huts,” Seabee Museum and Memorial Park, http://www.seabeesmuseum.com/quonset_huts.html (accessed March 2015).

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George A. Fuller and Company, based out of Chicago, was unlike a traditional architecture firm in that it dealt only with the construction aspects of the building; “this was the very first example of a modern-day general contractor.”² Established in 1882, the company was soon hired to construct the Chicago Opera House, the Rookery Building, the Tacoma Building, and the Rand McNally Building. By 1890, the firm had expanded and opened a New York office. There, George A. Fuller and Company constructed over 600 buildings and was responsible for some of the city’s most iconic commercial structures, including the *New York Times* Building, the Flatiron Building, Pennsylvania Station, and the Plaza Hotel.

While the commission for the new military hut was a departure from their typical work, George A. Fuller and Company had an established reputation as a pioneering construction concern. By the time the firm was contracted to construct a new Navy base at Quonset Point, Rhode Island – from which the new structure would get its name – military officials were already familiar with their work. Otto Brandenberger, architect for George A. Fuller and Company, spearheaded the design team, in part because he was the only licensed architect in the group. Brandenberger had previous experience reviewing plans for the Works Progress Administration and had also served in the United States Army, which made him uniquely qualified to understand the needs of a soldier on the battlefield.³ Other members of the design team were Robert McDonnell, Tomasino Secondino, and Dominic Urgo.



Framing a Quonset hut, 1946. (Edwin Eichelberger, HACLA Collection, Los Angeles Public Library)



Cladding a Quonset hut, 1946. (Edwin Eichelberger, HACLA, Los Angeles Public Library)

The Navy provided Brandenberger with only two specifications for the project: “the new huts should be arch shaped, for strength and deflection of shell fragments, and able to be quickly and simply assembled.”⁴ Additionally, the military wanted the huts to be developed within sixty days. The rigorous schedule imposed by the Navy, as well as the growing stockpile of orders for the structures, meant that production on the huts commenced while design refinements were still being tested and approved. Brandenberger and his team used the design of the British Nissen hut as their starting point.⁵ However,

² “The Architects,” U.S. Navy Quonset Huts, <http://www.quonset-hut.blogspot.com/p/the-architects.html> (accessed March 2015).

³ “The Architects.”

⁴ “Chapter 1: How the Hut Came to Be,” Quonset: Metal Living for a Modern Age, <http://quonsethuts.org/book/chapter1.htm> (accessed March 2015).

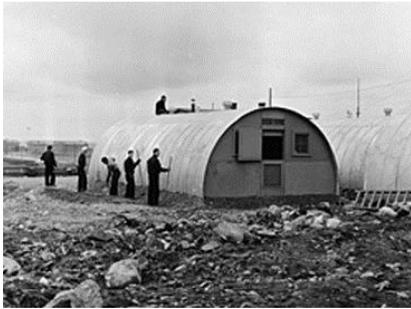
⁵ Ibid.

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utilizing the design as-is presented several significant problems: “too many gadgets” slowed construction of each hut. Also, the Nissen hut lacked any additional insulation, relying solely on the air space between the corrugated metal panels to function as the thermal barrier.⁶

Over the course of World War II, three primary versions of the hut were produced: the T-Rib Quonset, the Quonset Redesign, and the Stran-Steel Quonset. The hut was conceived as a standard building unit – inexpensive, easy to ship, easy to erect, and versatile in accommodation – ideal for use at remote new installations where building materials and skilled workers were not available, and shipping was a problem.⁷ The hut was designed to serve 86 official uses,⁸ but in reality was adapted to virtually every type of military program as the war progressed.



T-Rib Quonset. (U.S. Navy Quonset Hut website)



Quonset Redesign. (U.S. Navy Quonset Hut website)



Stran-Steel Quonset. (U.S. Navy Quonset Hut website)

The design initially developed by Brandenberger and his team was dubbed the T-Rib Quonset, a name which reflected the hut’s U.S. origins as well as its framing method, which utilized a T-shaped steel and iron arch. The plan, which was produced in two sizes, called for a hut constructed of corrugated steel sheets laid across arched steel and iron frames, spaced four feet apart, and affixed with nuts and bolts. The sheets were laid in a continuous arch so the walls and roof of the hut became a single structural member. While the design resembled that of the Nissen hut, the Quonset plan included several significant improvements, including interior Masonite lining, wading paper insulation, and a tongue-and-groove plywood floor on a raised metal framework.⁹ Subcontractors for the project, such as the Anderson Sheet Metal Company of Providence, Rhode Island, also contributed to the final design; it was Anderson who developed a new forming technique to produce the curved corrugated metal sheets used to cover the arched frame.¹⁰

In June 1941, the first batch of T-Rib Quonset huts was shipped overseas. By the end of the year, approximately 8,200 Quonset huts had been manufactured and installed both in the United States and abroad.¹¹ While the huts were a vast improvement over existing living conditions for many circumstances, as they were placed into service several inherent difficulties became clear. The T-Rib huts were awkward to crate and heavy to ship. Additionally, the continuous arch of the T-Rib structure meant

⁶ Ibid.

⁷ “Camp Endicott, Davisville Construction Battalion Center,” National Register of Historic Places Nomination Form, available at http://www.preservation.ri.gov/pdfs_downloads/national_pdfs/north_kingstown/noki_camp-endicott-hd.pdf (accessed March 2015).

⁸ “The Huts,” Quonset: Metal Living for a Modern Age, <http://quonsethuts.org/huts/index.htm> (accessed March 2015).

⁹ “Quonset Huts,” Seabee Museum and Memorial Park.

¹⁰ Ibid.

¹¹ “The Huts,” Quonset: Metal Living for a Modern Age.

that features such as beds, sinks, and washing machines had to be moved inward until they abutted the curve at the top edge of the unit, wasting valuable floor space.¹² To rectify the problem, Brandenberger and his design team proposed a modified plan known as the Quonset Redesign which, like the original plan, was available in two sizes. The new plan called for a segmental arch, rather than a continuous arch, and four-foot-high vertical sidewalls. The new segmental arch could be assembled in two sections instead of three, which reduced assembly time and required fewer fasteners.¹³ The framing was also changed to a lighter-weight material produced by Stran-Steel, making the new system 35 percent lighter to ship and 60 percent less expensive to produce.¹⁴

Production on the original T-Rib design ceased in 1942, and approximately 25,000 Quonset Redesign huts were subsequently manufactured by George A. Fuller and Company. With the transition to the Stran-Steel framing system utilized by the Redesign, the Fuller factory at Quonset Point was closed and production shifted to the facilities of the Great Lakes Steel Corporation, of which Stran-Steel was a division. The move prompted the second (and last) major redesign of the Quonset hut, which was known as the Stran-Steel Hut. The Stran-Steel hut was produced in two expanded sizes, but incorporated lighter-weight materials such as half-inch plywood and a lighter-gauge galvanized siding. Additionally, the siding layout was modified with the factory-curved panel used only along the ridgeline; the remainder of the hut was sided horizontally, which enabled panels to be shipped flat.¹⁵ The switch reduced both shipping space and weight, and returned the hut to its original continuous-arch design which, at the expanded size, no longer resulted in lost floor space.¹⁶ Approximately 120,000 Stran-Steel huts were constructed in the remaining years of World War II.

Given the widespread distribution of Quonset huts, the many adaptations made to their design, and their inherently temporary nature, it is difficult to confirm exactly how many were ever produced. However, it is generally estimated that approximately 150,000 to 170,000 Quonset huts of all variations were produced for the United States military during the years of World War II.¹⁷ Concurrently, by 1941, many private contractors had begun to recognize that the market for Quonset hut-type construction could extend beyond military utility. These companies began to develop their own versions of the Quonset hut in response to a specific need, or to market to “the Army or anyone else who would buy them.”¹⁸ Examples of privately-developed Quonset-style huts include the following.¹⁹

Jamesway Hut	16' x 32'	The James Manufacturing Company of Fort Atkinson, Wisconsin, developed a version with wooden ribs designed for Arctic weather.
Portaseal Hut	16'2" x 37'	The Portaseal Hut is a Canadian version of the plywood-clad, wood-framed Quonset-type structure.

¹² “The Huts,” Quonset: Metal Living for a Modern Age.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ “Quonset Huts,” Seabee Museum and Memorial Park.

¹⁷ “Quonset Huts, 829 Broadway, Santa Monica, California.” City Landmark Assessment Report. Prepared for the City of Santa Monica Planning Division by PCR Services Corporation, Santa Monica, California, November 2007.

¹⁸ “The Huts,” Quonset: Metal Living for a Modern Age.

¹⁹ Descriptions of the following hut styles as well as their dimensions have been taken from “Quonset Huts,” <http://www.quonset-hut.org/> (accessed March 2015). Extended descriptions are included at “The Huts,” Quonset: Metal Living for a Modern Age.

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Pacific Hut	18'6" x 37'4"	This hut is easily recognizable by the triangular Ridgeline vent cover and its exterior of Celotex, a waterproof form of Masonite.
Emkay Hut	20' x 48'	The Morrison-Knudsen Company created the Emkay Hut to shelter their remote military construction contracts.
Armco Hut	20' x 50'	During World War II, the Armco International Corporation designed personnel shelters, ammunition magazines, and arched corrugated ingot iron bunkers.
Butler Hut	16' x 48'	The Butler Manufacturing Company of Kansas City, Missouri, produced an all-steel arched hut.
Cowin Hut	36' x 60'	Cowin and Company, Inc., created large, semicircular, bloated steel warehouses for the Air Corps. Cowin huts are also known as "Steeldromes."
Utility Building	40' x 100'	The Utility Building is one of the largest versions of the Quonset hut. At the end of World War II, approximately 11,800 Utility Buildings were produced.
Multiple Utility Building	82' x 102'	This building could expand in both directions. In accordance with the Multiple Building manual, it could be extended in 61'6"-wide increments in one direction and 100' lengths in the other.

These and other private manufacturers continued to produce Quonset huts in a limited capacity after the war, hoping to market them as attractive options for housing, storage, commercial, or light industry uses.²⁰ However, the United States military found itself with a surplus of Quonset huts which it sold to the public for approximately \$1,000 apiece. These huts were adapted for a wide variety of everyday peacetime uses and functioned as housing, churches, supermarkets, barns, retail spaces, restaurants, garages, and industrial factories.²¹ Many huts were purchased, either by municipal authorities or by returning GIs themselves, for use as housing for returning servicemen and their families.

In Los Angeles, one of the most prominent examples of Quonset huts as postwar housing was Rodger Young Village, a collection of 750 Quonset huts which were assembled in a 112-acre area of Griffith Park that had served as an airstrip during World War II. Rodger Young Village housed up to 1,500 families of veterans who could not obtain housing elsewhere due to the tremendous shortage which occurred during the postwar population boom. In addition to housing, Rodger Young Village featured Quonset huts adapted to serve various commercial and community needs, including a beauty shop, branch post office, school, medical clinic, and market. The site was home to over 6,000 people before it was dismantled in 1954 to make way for the Los Angeles Zoo.

Veterans were often given the first option of purchasing Quonset huts which were put up for sale when military installations were decommissioned. However, municipalities sometimes decreed that improvements would have to be made if the huts were to be used as residences. Required alterations might include the addition of a solid foundation, enlarged window areas, permanent plumbing, and the bracing of interior partitions.²² Some Quonset huts were also altered by their new postwar owners to

²⁰ "Quonset Huts, 829 Broadway."

²¹ Ibid.

²² "Quonset Hut Owners Given Permit Advice," *Los Angeles Times*, July 23, 1946.

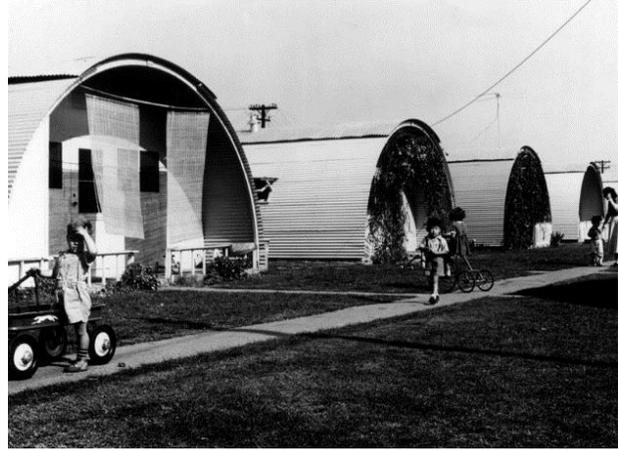
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reflect the style and character of more permanent site-built residences, including the use of wood doors and picture windows with decorative molding.²³



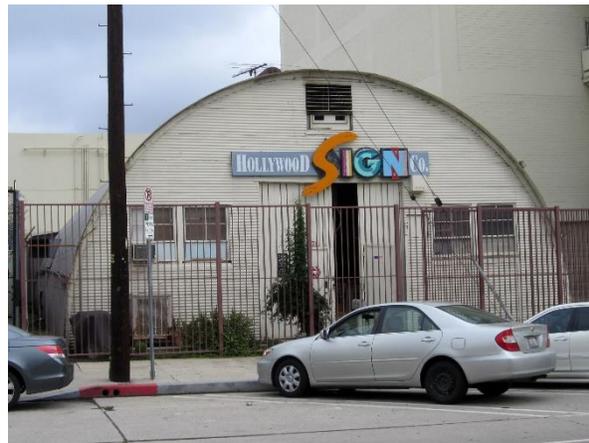
A row of Quonset huts at Rodger Young Village, 1950. (Leonard Nadel, HACLA Collection, Los Angeles Public Library)



Children play outside their Quonset hut homes at Rodger Young Village, 1951. (Leonard Nadel, HACLA Collection, Los Angeles Public Library)



1334 W 58th Street, South L.A., 1947 (SurveyLA photo)



1034 Cole Avenue, Hollywood, c. 1950 (SurveyLA photo)

²³ "A Quonset Goes Colonial," *Los Angeles Times*, August 8, 1948.

As the postwar housing boom began to subside by the 1960s, Quonset huts began to be viewed with a less favorable eye. While the Quonset hut exemplified many of the principles of the Modern architectural movement that was becoming increasingly popular at the time – open floor plan, use of prefabricated materials, affordable construction – their construction made them inherently susceptible to deterioration. Rusting metal was a common and unsightly problem. Additionally, those huts constructed with a continuous arch design could not offer the efficiency or floor area of conventionally constructed homes. Thus, the popularity of the Quonset hut as an alternative housing type began to wane. Efforts to “revitalize” some communities included the condemnation of Quonset hut villages to make way for higher-density development.²⁴

Today, Quonset huts of various types and sizes can be found throughout Los Angeles. Extant examples are almost always located in industrial areas; typical uses include light manufacturing, repair facilities, and storage. Isolated examples have been identified in Hollywood, Northeast Los Angeles, South Los Angeles, and in the industrial areas of the San Fernando Valley, including Reseda, Canoga Park and Mission Hills. Where the current occupying business has a commercial retail or office component, the façade of the Quonset hut is often modified to resemble a more typical storefront. Other common alterations include recladding, and replacement of windows and doors. In some instances, Quonset huts can be found in small groupings. On Branford Street in Pacoima, a large industrial parcel occupied by an automobile salvage yard appears to contain at least nine Quonset huts. A cluster of eight Quonset huts are situated on or around Teale Street in an industrial part of Del Rey, each occupied by a different tenant. It is possible that additional examples or clusters exist on larger industrial properties, such as airports, where they may not be easily visible from the street. Identified examples have dates ranging from 1945 to 1951, although it is not always clear if this is the original construction date for the Quonset hut, or the date when it was moved onto its current site. Given this history and development of the Quonset hut as described above, it is presumed that most extant example were moved to their present location.

SUB-THEME: The Quonset Hut, 1941-1965

Summary Statement of Significance: A Quonset hut evaluated under this sub-theme is significant as representative of an important building type and method of construction developed during World War II. The Quonset hut is notable for its simple construction, distinctive shape, use of prefabricated materials, and flexible interior plan. Intact examples represent the design and development of a low-cost and highly-versatile structure by the U.S. Navy for military use during World War II, and its adaptive reuse for housing and other uses during the postwar years. Significant examples include Quonset huts developed by the military, as well as Quonset hut-type structures manufactured by private contractors, which retain the essential physical features from the type, including its semi-cylindrical shape and corrugated metal cladding. An important symbol of mid-century utilitarian design and construction, the Quonset hut is a rapidly disappearing building type.

²⁴ “Quonset Hut Residents Must Move,” *Los Angeles Times*, November 24, 1963.

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Period of Significance:	1941-1965
Period of Significance Justification:	The period of significance extends from 1941, when the Quonset hut was first developed by the U.S. Navy, to 1965, encompassing the postwar years during which many military Quonset huts and Quonset hut-type structures were relocated and adaptively reused. This date range refers to the manufacture date of the units themselves; due to their portability, the date of manufacture may be different from the date a unit was located on a particular site.
Geographic Location:	Throughout the city, most commonly in industrial areas.
Area(s) of Significance:	Engineering
Criteria:	NR C CR 3 Local 3
Associated Property Type:	Quonset Hut
Property Sub-type Description:	A Quonset hut (or Quonset hut-type structure) is a semi-cylindrical structure constructed of corrugated steel sheeting placed atop arched wood or metal rib framing. Typical features include oversized door and steel-frame industrial windows. Due to the portability and versatility of this building type, these structures can be found throughout the city and adapted to a variety of uses, though they are most commonly found in industrial areas.
Property Sub-type Significance:	A Quonset hut (or Quonset hut-type structure) is significant as an important World War II-era building type and method of construction, notable for its simple construction, distinctive shape, use of prefabricated materials, and flexible interior plan. Intact examples represent the design and development of a low-cost and highly-versatile structure by the U.S. Navy for military use during World War II, and its adaptive reuse for housing and other uses during the postwar years.
Eligibility Standards:	<ul style="list-style-type: none">• Was originally constructed during the period of significance• Exemplifies the Quonset hut building type• Retains the essential physical features of the type, including its semi-cylindrical shape and corrugated metal cladding• Includes Quonset huts developed by the military, as well as Quonset hut-type structures manufactured by private contractors

**Character-Defining/Associative
Features:**

- Half-cylinder shape, with wood or metal rib framing
- Rectangular plan
- Clad in corrugated metal sheeting
- Oversized doors
- Steel-frame industrial windows, typically divided-light
- For the National Register, a property must possess exceptional importance of less than 50 years of age

Integrity Considerations:

- Must retain integrity of design, materials, workmanship, feeling and association
- May have been relocated, due to the portability of the type
- May have a different use, due to the versatility of the type
- End façade may have been altered, particularly if it is the street-facing façade
- Doors and windows may have been replaced
- Small additions may be acceptable, if the Quonset hut remains clearly discernable
- Security features, such as metal gates or window bars, may have been added

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